# DOMESTIC ENGINEERING

PLUMBING HEATING LIGHTING MILL SUPPLIES

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## Optimism a Powerful Mainstay

## Trade Pessimism must be Obliterated

It is time for the trade to awaken to the fact that **this is not a pessimistic age.**

We are living in an **age of optimism. The predominant characteristics of the American are inordinately progressive.**

These endowments, coupled with a **consuming desire for mental superiority,** even to the expense of physical deterioration, have served to **emblazon the name of Yankee** on the apex of the flagstaffs that float the banners of **commercial supremacy before all the nations of the earth.**

The trade in which we are actively engaged **is evolutionary.** It is undergoing a continuous change, and all active minds should realize this fact and prepare to acquiesce in its realization.

**Millions of years ago this earth,** which many think so supreme in the realms of space, although to those possessed of a comprehensive knowledge of the limitless ethereal dome extending far beyond the power of any intellect to ascertain, **a mere pebble on the oceans of eternity, was seething with evolution.**

The fiery ordeal through which it passed and the subsequent clarifying and cooling processes were necessary to the **advent of man.** Prehistoric animals and plants vied with each other unknowingly in this great work of preparation, and their remains lie deep in the bowels of the earth, a silent reminder and tombstone marking the progress toward the day when **wisdom should reign in man** and the instinct of the lower animals become **subjective to his will.**

It was a **supreme sense of optimism** that enabled **ancient Greece** to build a lofty foundation for art and literature far transcending the age of **Minos of Crete** and his **wonderful Minotaur,** the formative period antedating the supremacy of the oracle and the temple of Apollo, which played so conspicuous a part in the triumphs of the Spartans and Athenians.

It was **optimism transplanted in the Roman mind** that enabled that nation to forge ahead, dominate the active civilization of the world and perch on the top rounds of the **historic ladder of fame.**

It was **pessimistic inertia** that marked the **decadence of these great nations** and cast a gloom over hundreds of years, when man groveled through the **vacillating stages of the dark ages.**

**The English language,** spoken by the most acutely active people of the earth, has become **supreme.** Wherever it is spoken, there will you find **a degree of optimism** far more potent than that which marks the advent and **domination of more phlegmatic or docile languages.**

**Americanism** denotes the most **extreme, progressive** and **insatiably active type of manhood—the acme** in the grand struggle for **intellectual and commercial supremacy.**

So long as **optimism dominates** the triumphant march of civilization, of which we are the most conspicuous factor, we shall know no insurmountable barriers. The discordant notes of the **pessimistic minority** will be subjugated by the **overwhelming avalanche of the optimistic majority.**

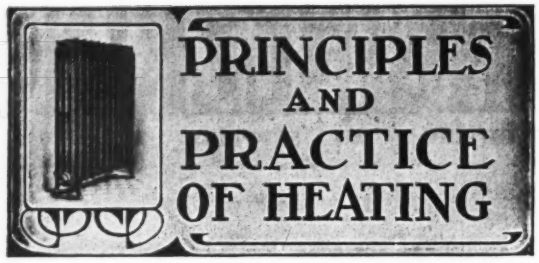
Were we given to pessimism we should probably still be getting along over the antequated strap-rails that marked the inceptive stages of railroading in this country; we should still be jogging along behind the old horse and wagon instead of the fast-moving automobile driven by steam or electricity; we should even at this day remain passive and say that it is impossible for man to subjugate the air and sail aloft as does the bird in its noiseless flight, and, in the end, be **termed obstructionists** and placed in the same **category as disintegrating Turkey.**

The most astounding example of the disintegrating work of pessimism of the last century will be found in the vain attempt of the French nation to **dig the Panama Canal.** Instead of paving the way for the existence of men by **thorough sanitation,** so that the canal zone should be free from the deadly breeding places of disease, they **invited the nations of the earth to send thousands of men to their death trap,** so that they might conquer the obstacle by a **supreme sacrifice of life. Optimism gave way to pessimism, despair and abandonment of the project.** The pessimism evidenced by their failure permeated all nations except the United States.

When the French sold us their interests in that region for $40,000,000 they momentarily rejoiced at our discomfiture. They gloated over our bargain for the "white elephant" and smiled when they thought how the Yankee would pass in his checks on those miasmic fields which for them had been a huge cemetery.

**The optimism of the Yankee, however, knew no limitations.** After two years of sanitary engineering and the rendering of the zone one of the most healthful in the world, the real work began. A mighty army of

(Concluded on page 168)




## Progressive Heating—VII*

EDITED BY JNO. K. ALLEN

Associate Member American Society of Heating and Ventilating Engineers, Member American Society of Inspectors of Plumbing and Sanitary Engineers, Member Royal Sanitary Institute of Great Britain.

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In stating that the average 3 Col. 38 in. radiator will emit 240 B.t.u. per sq. ft. per hour, when filled with steam at 217°, and surrounded by air at 70°, it must be borne in mind that if the temperature difference changes, the rate of emission will also change.

The heat given off by any radiator per sq. ft. per hour is obtained by multiplying the transmission or emission co-efficient by the temperature difference between the radiator and the air surrounding it. Thus: If the co-efficient is 1.63, and the temperature difference is 147°, multiply 1.63 by 147, and the result is practically 240 B.t.u., which the radiator will emit per sq. ft. per hour under these conditions.

If the temperature of the radiator is 225° and the air 70°, the temperature difference is 155°, and 1.63 times 155 is 252 B.t.u. per sq. ft. per hour.

The co-efficient of a radiator is the quantity of heat that is given off or emitted per sq. ft. per hour for one degree temperature difference between the radiator and the air which surrounds it.

Steam radiators are usually tested for efficiency by admitting steam to the radiator and weighing the condensation in periods of one hour.

Consider a radiator containing 50 sq. ft., which, when filled with steam at a temperature of 217° and surrounded by air at a temperature of 80°, will condense 11.6 lbs. of steam per hour. Divide 11.6 by 50 and find that the radiator is condensing 0.232 lbs. per sq. ft. of surface per hour. Multiply 0.232 by the latent heat (962.3) and find that the emission per square foot per hour is 223.5 B.t.u. Divide 223.5 by the temperature difference (217—80=137) and find that the co-efficient is 1.63.

If, when this radiator is used for heating purposes, the temperature difference between the radiator and the air is greater than 137, the heat emission per square foot per hour will be greater than 223.5, and if the temperature difference is less than 137, the heat emission per square foot per hour will be less than 223.5.

The standard conditions for low pressure steam heating give a temperature difference of 147° (217—70) and the heat emitted per square foot per hour is 240, which is proven by multiplying 1.63 by 147.

If a radiator, the co-efficient of which is 1.8, is operated with a temperature difference of 147°, the emission per square foot per hour will be 265, because 1.8 multiplied by 147 is 264.6, or in round numbers 265.

90.5 sq. ft. of radiation with a co-efficient of 1.8 will give off the same quantity of heat as will 100 sq. ft. of radiation, the co-efficient of which is 1.63.

The co-efficient of 1 in. pipe coil placed along an outer wall and under windows will average about 2.3. Under these conditions 100 ft. of 1 in. pipe coil will give off as much heat as will 128 ft. of a radiator, the co-efficient of which is 1.8.

For the foregoing reason boilers of greater capacity should be selected when they are to be attached to pipe coils, more especially if the coils are in a factory building, under the windows, and where the temperature difference is at times as high as 180°.

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*Previous installments of this series of articles were published in the issues of April 11 and 25, May 9, June 27, August 15 and October 10. These numbers can be obtained for 10 cents a copy.

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### GIVE THE BEST YOU HAVE.

"There are loyal hearts; there are spirits brave;
There are souls that are pure and true.
Then give to the world the best you have,
And the best will come back to you.

"Give love, and love to your life will flow,
A strength in your utmost need;
Have faith and a score of hearts will show
Their faith in your word and deed.

"Give truth, and your gift will be paid in kind,
And honor will honor meet;
A smile that is sweet will surely find
A smile that is just as sweet.

"For life is the mirror of king and slave;
'Tis just what we are and do;
Then give to the world the best you have,
And the best will come back to you."

# How to Make Hardwood Forms for Bending Iron Pipe Cold

In recent years there has been quite a demand for hardwood forms for bending iron pipes cold. The introduction of considerable electrical wiring in buildings has stimulated the use of forms for bending pipes through which to carry the electrical wires. The electricians require methods of pipe bending in which the metal piping can be bent speedily and cold. Then there is much iron pipe bending in vogue in connection with the modern automobile. The advent of gas and gasoline engines in the industrial establishments of the country has likewise increased the field of service for small iron pipes and these pipes must frequently be bent. There is a great deal of bother experienced when you undertake to bend the pipe cold without using the proper precautions to preserve the wall of the pipe. Your pipe will collapse if you undertake to effect a bend by simply coiling the pipe over the end of the anvil, or by adjusting it in the jaws of the vise. If you heat up the pipe and bend, other trials arise and you do not get the required result.

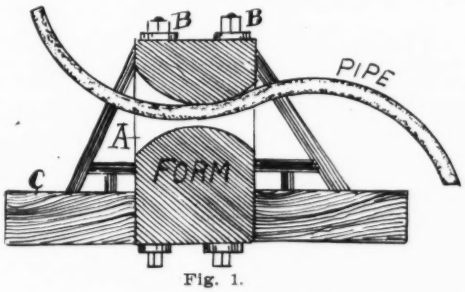


Fig. 1.

Now then, the hardwood form is becoming popular. These forms are constructed in various design as illustrated in the accompanying drawings. Almost any woodworker can construct these types of forms. Owing to the fact that considerable exertion comes on the wood form, in the process of bending pipes, it is essential that proper material be used.

There are good forms and there are poor ones. I have seen wood forms for pipe-bending purposes shaped from pieces of cedar, willow, pine and kindred wood. The blocks were protected by bolts passing through and by nailing sheet metal edges at the corners. Otherwise the blocks would not have answered the purpose. I have seen some forms of soft pine, in a split and warped condition and unfit for use. The best wood for these pipe-bending forms will be found in the ash, elm, oak, etc. Of course walnut and mahogany are first class, as is also box-wood, and like material. But these woods may not be handy in every shop. After you get your selection of wood, and assure yourself that it is free from defects, the process of making the forms begins.

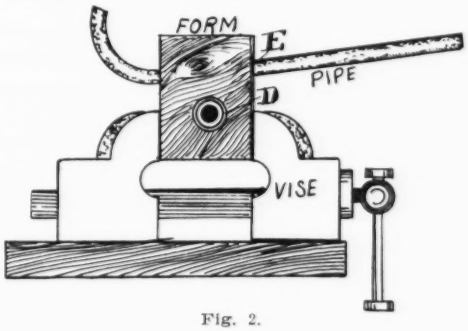


Fig. 2.

In Fig. 1 is a type of pipe-bending form used in some places where considerable pipe is bent cold. It consists of a block of hardwood with the central portion shaped out in hour-glass fashion. This allows the pipe to be inserted as at A. The form is securely bolted to the base plank by means of the bolts B,B. There are side braces from the base plank C to support the block as shown. But you cannot bend the pipe in any form unless the pipe is first "filled." Rosin, clay, putty, etc., make good fillers. The filling braces up the interior of the pipe and prevents the pipe wall from being depressed.

Another form of hardwood block for bending is presented in Fig. 2. This consists in the selection of a block of hardwood about eight inches square. It is supported in the vise. Then there is a hole put straight through the block at D and another one through the other side of the block to receive the pipe E. Thus the pipe for bending may be inserted into either hole and by proper force, the desired curves can be made in the pipe. Sometimes a common form of half circle or arc of hardwood form is required as in Fig. 3.

The common mode of making these types of forms consists in turning out the complete cylinder from hardwood. Then the disk is sawed through to get two arcs. Each arc is bolted to the base plank.

Then with the hammer, the pipe is pounded to the curve required as at F. Not only are the hardwood forms required, but means are provided for hardwood clamping devices to support pipes during the curving operations. Fig. 4 shows a clamp of the kind mentioned. The jaws are specially selected

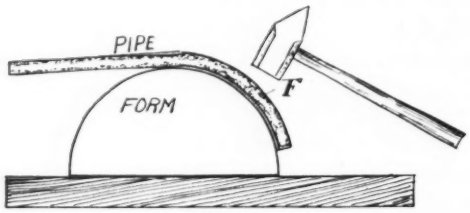


Fig. 3.

hard stock, chosen for toughness and evenness of grain. The clamping bolts may be wood, with spirally cut screws. Or these bolts, marked G, G, G, G, may be iron, providing there are correspondingly threaded nuts mortised into the clamps. With the bolts the jaws are closed upon the pipe as shown.

The common two sided wood clamp for a pipe is shown in Fig. 5. This is usually made with four bolts and nuts arranged as shown. The quarter disk form for bending is exhibited in Fig. 6. This form is quite liberally used by pipe benders. The form is made wide enough to give plenty of surface on which to bend the pipe, and can be of any size in diameter required. The wheel on the

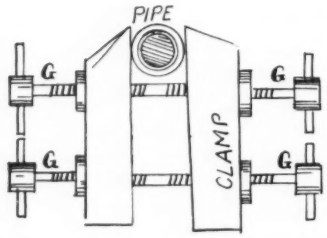


Fig. 4.

Fig. 5.

wood-stand at I is made from hardwood and is turned down to shape a groove, because the groove is convenient to hold the pipe steadily during the application of force for curving the same.

Then there is the three-wheel bending form shown in Fig. 7, also constructed of hardwood. Three hardwood uprights are first sunken into the base piece as shown. Then the proper hardwood pins are fixed to the upper ends of these stands and these pins support the three wheels. The wheel J is made larger in diameter than the two lower wheels K and L. The wheels are all slightly grooved, just enough to carry the pipe readily. This process of bending is calculated for light pipes only. The pipe for bending is packed with its filler in the usual manner. Then the pipe is drawn through the rolls repeatedly, until the desired curve results. A little more of the bend if effected at each drawing. Hence it is only necessary to continue the drawing until the right curve results.

When you try to get a bend in a pipe in a vise, you are taking chances. However, there are some kinds of pipes that can be bent in the vise. Be-

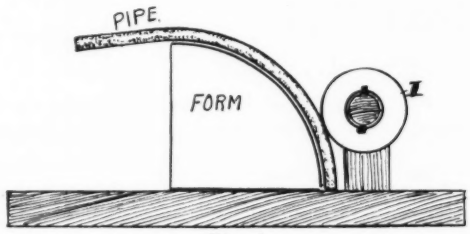


Fig. 6.

fore you put the pipe against the hard steel jaws, it is a good idea to protect the pipe surface with soft-metal clips as illustrated at M in Fig. 8. These jaw-clips are made from lead or similar soft metal and are readily slipped over the rough and hard edges of the jaws of the vise and protect the pipe walls.

The final wood form for pipe bending purposes is exhibited in Fig. 9. This form is made first with the foundation plank O. Then a strap of wrought iron,

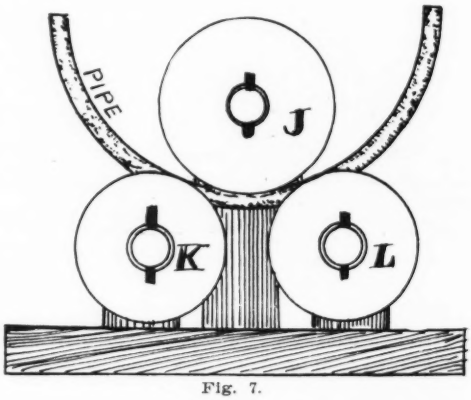


Fig. 7.

marked N, is adjusted about the whole affair. This strap is about two inches wide, one-quarter inch thick, and shaped large enough to receive within its square the upper blocks and key. The frame is secured below with bolts. Next we construct the

base form P and attach it to its position. Then comes the top form R. The base form and the top form are cut out with the curve to which it is in-

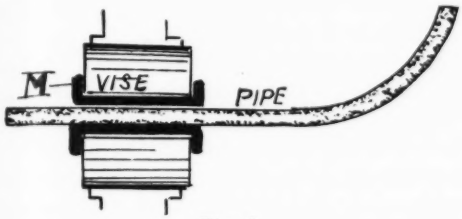


Fig. 8.

tended to bend the pipe. The pipe for bending is placed between the two forms and then the hardwood tapering key is driven under the upper part of

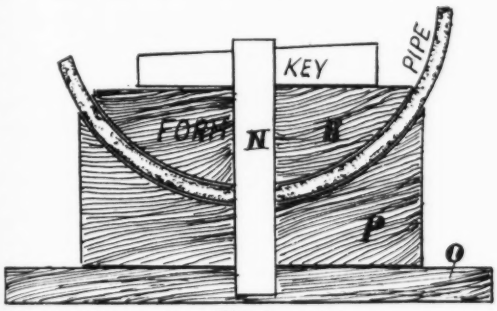


Fig. 9.

the frame as shown. Thus the upper from compresses down upon the pipe to the lower form and the pipe is bent to correspond.

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### The Danger.

The busy man stopped before an office building and leaped from his carriage. At the same moment an ambitious urchin ran forward and piped:

"Hey, mister, kin I hold yer horse?"

"No, you can't!" snapped the busy man.

"Won't charge y' much," insisted the urchin.

"I don't care about the charge," impatiently responded the man, throwing a blanket over his bony steed. "My horse will not run away!"

"No? I thought he might fall down."—Democratic Telegram.

### Only the Truth.

Two tramps approached a railroad telegraph office not far from New York the other day and looked hungrily through the window, but there was not even a dinner pail in sight to induce them to ask for food. One of them finally tapped on the window, and the operator left his key long enough to inquire:

"Well, what can I do for you?"

"Just report two empties going east," replied the tramp, with a grin, and started down the track toward New York.

# Plumbing Practice, Old and New, and Some Memories from Other Days

By James Ryan

President of Ryan & Son Plumbing Company, of Nashville, Tenn.

**What a Crazy Person will do to Stop a Waste Pipe**

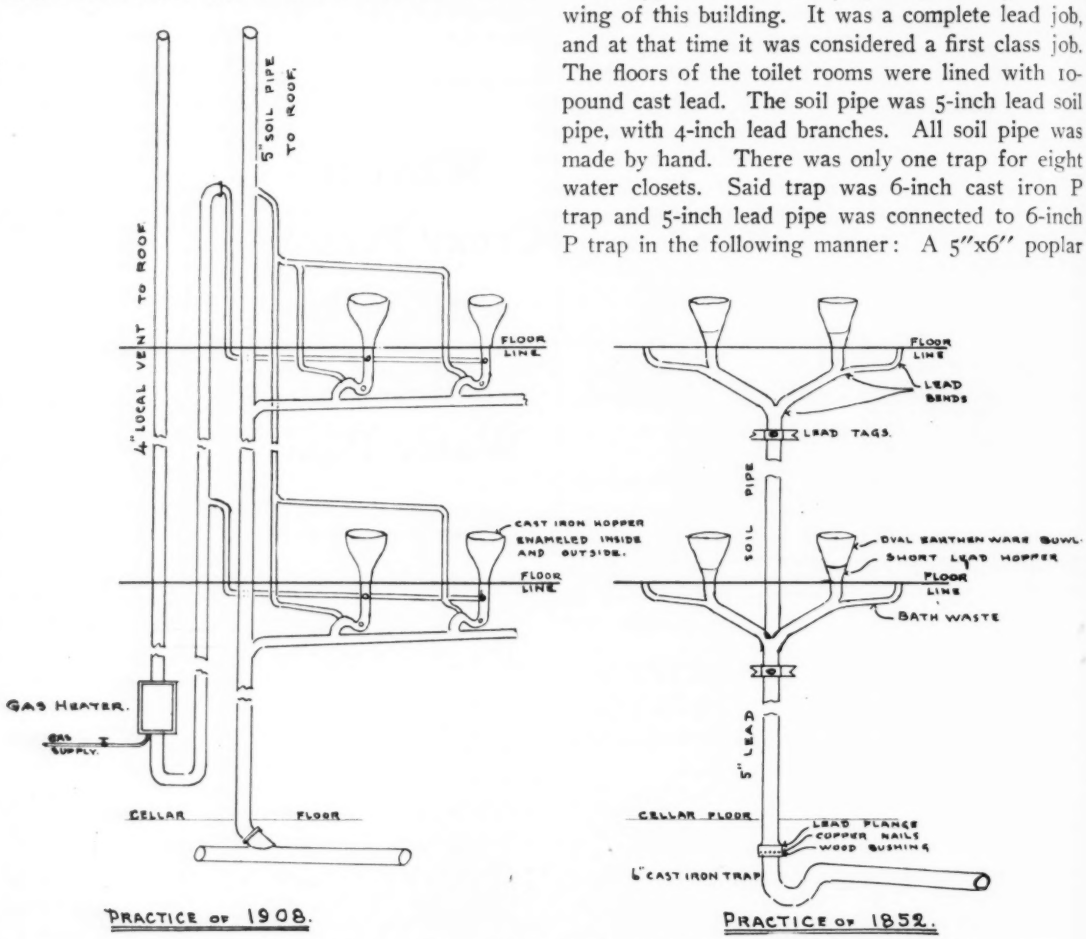
It is quite likely that the comparison between plumbing installations done in 1852 and in 1908, as illustrated in the accompanying sketches will be of interest to many readers of "Domestic Engineering," and it is therefore with considerable pleasure that I add the following explanatory notes and details:

Both these systems were installed at the Central Tennessee Hospital for the Insane, near Nashville, Tenn. The up-to-date (1908) system was installed in the new wing of this building, which has just been completed. This wing has four stories, and there is a toilet room on each floor, the three on the upper floors located directly above the one on first floor. There are two closets, two bath tubs, two urinals, one slop sink, one four-bowl lavatory and one kitchen sink on each floor, and in addition to this there is one closet and one lavatory in the basement. All fixtures have both back and local vents. There are no elbows in this system, only tees and y's being used. This was done to allow the removal of obstructions without the necessity of disconnecting fixtures when such stoppages occur.

A great deal of trouble is experienced in institutions of this kind from the stoppage of waste pipes. To show the trouble an insane person will take to stop up a waste pipe, I will cite an instance which came under my observation. A patient saved up a quantity of burned matches and dropped them through a urinal strainer until they filled up the pipe; these matches then swelled up and the pipe was stopped as tight as if a wooden plug had been driven into it with a hammer. Insane persons have

also been known to twist up blankets and work them through the waste pipes.

The system of local venting adopted in this case is shown in the sketch published herewith. The vent pipe is run to a heated flue, which creates strong down draft from each fixture. You can hold a piece of lighted paper over one of these fixtures and the draft will draw both the flame and the smoke down through the fixture.




Sketch showing type of plumbing systems installed at the Central Tennessee Hospital for the Insane, near Nashville, Tenn., in 1908 and in 1852.

The administration building and two wings of this hospital were built in 1852. The plumbing was contracted for by the pioneer plumbing firm, Thos. Gibson & Company, of Cincinnati, O. They sent two young Scotch journeymen plumbers to do the plumbing in this building. Their names were Matthew and Andrew Henderson. After observing the conditions of the trade in Nashville and vicinity, they sub-contracted this job from their employers and went into business for themselves under the name of Henderson Brothers. They were for years the most prominent and successful plumbers in the south, and they became quite wealthy and retired from business in the early seventies.

In 1873 I removed the original plumbing in one wing of this building. It was a complete lead job, and at that time it was considered a first class job. The floors of the toilet rooms were lined with 10-pound cast lead. The soil pipe was 5-inch lead soil pipe, with 4-inch lead branches. All soil pipe was made by hand. There was only one trap for eight water closets. Said trap was 6-inch cast iron P trap and 5-inch lead pipe was connected to 6-inch P trap in the following manner: A 5"x6" poplar wood bushing was driven into the trap, lead pipe was slipped in and lead flange was wiped on lead soil pipe, then painted and tacked on wood with copper tacks. The other end of the trap was caulked into length of 6-inch water main and carried through wall and from there in cedar box to creek. There were no clay pipe in those days. One-half-inch plain iron pipe at that time listed at 25 cents per foot, with 35 per cent off; other pipe in the same proportion.

I shall never forget the day I began taking the old plumbing in this building, as it came very near

being my last job. I wanted to make a record by doing a great deal of work, but became overheated and deathly sick. Cholera was raging in Nashville at that time and the doctor thought I had cholera. Dr. John A. Beauchamp, now superintendent of the hospital, who has been my life-long friend, was a young physician at the hospital at that time. He prescribed for me and I soon became all right.

In the remodeled system I trapped all fixtures with separate traps, but vented nothing, as this was not known at that time. I lined the tank with 6-pound lead. Tank was 10′x10′x5′ deep. I had rather a peculiar experience with pipe getting air-bound on this job. I remedied this, however, in the usual way.

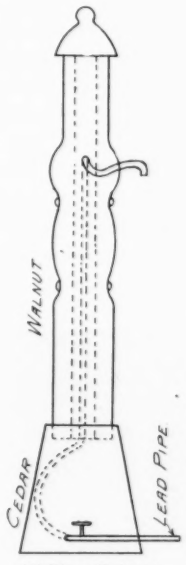
On the old, and also on this job there were shower baths on each floor, which were used more for punishing the patients than for cleanliness. They were built as follows: Box 20″x20″x7′ high, lined with galvanized iron. The shower came through top and the water was controlled on the outside by attendant. When a patient became unruly he was placed in this box and door closed and the water turned on his head. It had a very quieting influence on him, but this and all other means of punishment have long since been abandoned.

In 1894 one of the wings in this institution was destroyed by fire and we did the plumbing in almost exactly the same manner as we did in the wing that we have just finished. In the old wing referred to there was a hot water heater in the basement. To get additional ventilation, I took advantage of this in the following manner: I built a 4-inch brick casing around the heater and left a four-inch air space; also left some air holes at the bottom. I then ran a 10-inch cast iron pipe from the top of the heater to the attic. I left a 10″x4″ Y on each floor near urinals. This creates up draft and takes odor from drippings on floor.

The water closets used here back in 1852 were short lead hoppers soldered to lead floor and flanged out at top to receive porcelain oval bowl. The bowl had lead fan inside to distribute the water in bowl. To put the fan on so that it would distribute the water properly was a difficult job and required a great deal of skill. The flush pipe was connected to horn of bowl by joint made of melted rosin and putty. Every two water closets were supplied by one lead-lined tank that had service box for each closet. There was also a 3-inch valve for each closet. The tanks had ball cocks, ball levers, heavy copper wire ball cranks and a lot of trimmings that plumbers of today would not know what to do with. The old Carr patented pan water closet superseded the above closet and held the field for about twenty years, when some inventive genius claimed a new invention and built a closet like the one used in 1852. The same principle is used on the closets of today, except that the individual tanks, syphons and floats are used instead of service box. The old style pan closet had the water from the street connected directly to bowl, which made a thoroughly unsanitary fixture.

I tried to get a photograph of the last work we did in the new Asylum Wing, but could not get one that would show the web of pipe, but through the courtesy of Robt. Sharp, one of the leading architects here, who planned the new wing of the Asylum Building, I am enabled to show the principle of the last job we did on this building, and also my recollection of the way the one in 1852 was done.

The plumber of today has an easy time, as he has all of his material made and fitted for him. We had to cast our own sheet lead, make our lead traps and make all our lead soil pipe. We also had to cut our nipples. Stop cocks were very expensive and would last only a short time.



Old-Time Hydrant

Plumbers also made their own hydrants. The hydrants were usually made in wet weather or when it was too cold to do outside work. The making of hydrants was one of my nightmares. The boss would get all the boys together and stay right there to see that we kept at work. The boring machine was the limit; the main body of the hydrant was a piece of seasoned walnut timber 3 feet long and 6-inch diameter, neatly turned. We had an old 2-inch auger mounted on wood frame, and we had to bore hole end ways through this walnut log, after which it was mortised and put on a cedar bottom. A ground key riveted bottom was added, a stop and waste cock wiped to lead pipe. The finishing touches were then added in the shape of a fancy turned poplar top and a coat of green paint for the entire hydrant. These hydrants sold for $10, but considering the labor they were cheap at that. One great drawback they had, this namely, that they had to have new stop cocks put in about every sixty days, as this part soon wore out.

# The Claims of the Society of Plumbing Inspectors for Support*

By Frank K. Chew, New York City

THE wide acceptance as a fact that in a multitude of counsel there is wisdom justified the effort to establish the American Society of Inspectors of Plumbing and Sanitary Engineers that men engaged in any branch of sanitary work might meet and discuss its every detail, not only for mutual benefit but for the benefit of mankind. It is an honor for our president that he saw the need and had the courage to face all the difficulties encountered in establishing the society. It has already rendered excellent service in its chosen field and it remains for all who are engaged in that field to see that it is perpetuated and that its record is one of advancement and benefit wherever its energies are devoted and its influence reaches.

The history of all successful bodies organized for equally commendable purposes should be sufficient incentive for all men engaged in any branch of sanitary work to give this society the support of both their membership and the information gathered in their practice. They must follow the example of men in other societies and lay aside their prejudices, pet ideas, personal preferences and criticism and give encouragement to the society by taking part in its work and do their best to promote its objects. Its field is broad and without confining the things to be attained to those mentioned in the constitution and by-laws certainly two fields are suggested by its name in which good work is sure to benefit mankind.

They suggest *law and science.* Taking them in this order there can be no doubt that associated effort can lend force to the educational work which should be taken up in every center of population to show the people the advantage of health protective practice and through their representatives secure the enactment of laws and regulations to make the observance of these provisions mandatory under the surveillance of competent officials. There is no man who derives a livelihood from such an office but who should feel that he owes to this society his allegiance. It is working for things that are to his positive interest. It needs the information he gathers in his every day experience through discussions at its meetings and reports on his practice and observations in his absence and in the preparation of papers on subjects of interest on which he is qualified and which will help to turn public sentiment toward health protective measures, help in providing proper regulations for plumbing work, help others in their official duties and provide in the society information that can be spread widely for public benefit.

The society is the proper repository for information which will serve to support those who are interested in the adherence to good practice well established who must lead a movement to have such changes made as are clearly shown necessary by opinions widely gathered yet arriving at the same conclusion. At times it seems the most natural attitude of the citizen to see only the difficulties that must be overcome rather than to discover how easily these difficulties can be removed by the expenditure of the same energy. The drafting of a state law for the regulation of plumbing or of a local ordinance for the same purpose to those who are not familiar with such work is a task of no mean proportions, but if the archives of our society contained copies of the laws of every state and copies of the plumbing regulations of the larger cities it would be possible for a committee composed of men qualified and most interested in these subjects to report on them and to point out where there has been an adherence to the beaten track rather than the intelligent diversion from it for

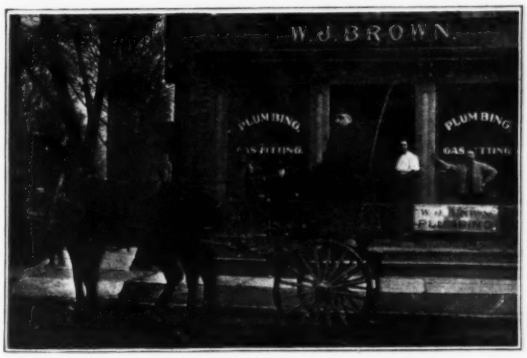
*Read at the third annual meeting of the American Society of Inspectors of Plumbing and Sanitary Engineers, held in Chicago on February 10-12, 1908.

"The Main-Stays." In front of the progressive establishment of Wm. D. Rodgers & Co., at Schenectady, N. Y., will be seen here the head equipment of that institution. Photograph by our Mr. Winslow.

the accomplishment of greater good to submit drafts of laws and regulations in advance of any now in force. Without such work is done the burden of advancement is likely to be thrown heavily upon some courageous individual who may lack the necessary endurance to persist to the end and he may feel disappointment that what he knows to be in every way commendable is not more freely accepted and that those who share his opinion do not throw the force of their influence to his support. This seems to show that the society provides ground upon which all who are interested in the legal phase of the society's work can meet, and if conscientious study is given to the work, orthodox laws can be made to protect the health and provide for the comfort of people in centers where now the work of the discouraged individual has failed to provide them with the benefits which others enjoy. The correspondence of our president and officials, though the society is yet in its infancy, will show that it already has been a great help to many who have sought assistance in the securing of plumbing regulations and that what the society has already accomplished makes it a welcome addition to the useful organizations already established and which have merited the confidence and support of mankind.

Possibly if more detailed plans and suggestions were presented on the legal phase of the society's work the interest of plumbing inspectors would be more widely awakened, but there should be at least something implied in what has been presented which every sanitary official can apply to himself to bring home to him the desirability of contributing his little to the work upon which the society is engaged. A wider field of effort is found in the scientific phase of the society's work to which the sanitary engineer is devoted. Previous to the organization of our society sanitary engineers had no place of meeting which they could call essentially their own. The American Society of Civil Engineers had dealt with the larger problem of sewage disposal and water supply as an incident in the larger undertakings to which their energies are devoted. The American Public Health Association has similarly devoted much of the time at its meetings to the discussion of subjects on which prominent sanitary engineers have expressed their views so that the sanitary engineer has been giving of his best to the public. These sanitary engineers, however, are the men who should give encouragement to our body, which has already spread many useful papers before the public and already has its committee preparing to conduct tests to get authoritative information on the operation of sanitary equipment and has encouragement from government officials that as far as they have authority their co-operation will be given. There are points on which eminent sanitarians differ honestly and widely only because they have never had the opportunity of meeting and discussing the subject of difference where all information bearing upon it can be brought out so that ideas based on wrong principles can be abandoned and a common effort made to secure general acceptance of a practice or a conclusion which is demonstrated in the light of full information to be correct.

There are engineers of long experience with a wealth of information who find that the demands upon their time leave little for the preparation of papers or for meeting their confreres or competitors for the discussion of points which in their mind have been settled. Yet these men owe it to their profession and to the public that the information which they have been able to collect in the service of their fellow men should be in some way recorded for the guidance of younger men. They also owe some of their busy time to the meeting with men who are engaged in the same line to explain by the presentation of facts discovered in actual practice why some of the conclusions which are leading some astray are not correct and should be abandoned. It is these men who owe even to our little society something from their lives, not for the benefit of the society alone but for the benefit of mankind. Every member of the society feels that it is worthy of support of every man in any way connected with the field of sanitary work. Familiarity with the com-




The busy plumbing establishment of W. J. Brown at Rochester, N. Y. Mr. Brown will be noticed on his wagon, while his daughter and able assistant stands in the doorway.

mendable purposes for which it is organized will show that they can be attained more readily through the co-operation of both the officer of the law and the engineer or representative of science and to all a cordial invitation is extended to co-operate with it.

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## Making a Convert of Scotty

By Edwin Drood

**Incidents in a Journeyman Plumber's Career**

"There are lots of strange people in this world," remarked Kelly to the drummer, as he reached for the push button, adjoining his table at the club, "and one can't be in this business for fifty years or more, without meeting some of them. I have had lots of strange characters working for me," he continued, reflectively, "but the strangest of them all, I believe, was Scotty.

"It was in the early days, when plumbing and lead working meant one and the same thing, and good journeymen, particularly good journeymen who didn't drink, were scarce as angel's visits, that Scotty drifted in. I say drifted, because that was what actually happened. It seems that Scotty, with a number of companions, went camping during one of the numerous differences between journeymen and masters regarding wages and hours, and had selected for site a wind-swept point, jutting out into the lake. They had taken a gasoline furnace along to keep the tent warm and when the gasoline became exhausted they started to keep up the animal warmth by imbibing freely from the case of bottles they had brought along. The result was that soon they all felt so comfortable that they decided on a midnight swim, even though the temperature was down around forty; that is, they all did but Scotty. He had figured out a nice, warm berth in the boat under the canvas sails, and while his companions were making for the beach, Scotty was making for the boat. What happened afterward he was never able to figure out, but at all events, the boat got loose from its mooring, the wind came up and when the sun rose in the morning land was nowhere to be seen. It was perhaps during the solitude of the next day and night on that vast expanse of water, that Scotty first experienced religion. At all events when in the afternoon of the second day his little bark drifted into our harbor, Scotty's first act was to get a skinful of whiskey, and his next was to go to church. Indeed, from that day the two acts became inseparably associated, so that whenever Scotty got drunk, you could tell by the token that he likewise had been converted—for he always became a convert to a new religion at each spree—and conversely, when you learned that he had 'told his experience' or conducted a meeting at some Bethel, barracks, or church, you could figure it out to a certainty that he had been drunk. That is how it came about that when anybody asked Scotty to have a drink, it was referred to as making a convert of Scotty.

In appearance, Scotty was the queerest of mortals. Slightly under medium height, and slender to the verge of boniness, he had round shoulders, which gave a peculiar hollowness to his chest, as though both lungs had dried up and allowed his chest to cave in. This appearance was exaggerated by the Prince Albert coat he wore, the tail pocket of which was always filled with red onions, which, during a spree, he ate, as other people would apples. His head was large, too large for his body, and one of his brown eyes had a peculiar cast which made it difficult to understand whether they were looking at you, or at some one at his side. Add to this a certain bleariness of eye and a maudlin expression, and you have a pretty good mental picture of Scotty when in his cups. When sober he was a very good workman, but toward the last, the periods when he was sober were so few and of so short duration that his other picture could not be taken.

"I remember distinctly one Saturday night, when it became my duty to round him up and keep him sober until Monday morning, I had got track of him down on what was called the 'point'—a neck of land, jutting out into the lake, where all the low grog shops were located—and followed him for hours and hours, without the trail getting any hotter. At last, one of the boys, who was with me, stopped, and clutched my arm.

" 'How stupid' he said, 'for us not to think of it sooner. Scotty must now be in condition to be converted. Let's go visit the barracks.'

"Straight back to the Salvation Army Barracks we went and the very first object we saw upon entering the meeting place, was Scotty, leading them in song. Never will I forget that picture so long as I

live. Standing in front of the congregation, his hands uplifted, his body swaying unsteadily from side to side and his eyes looking everywhere, apparently, at the same time, in a rich baritone voice, he was singing 'Jesus, Savior, Pilot Me' in a way that would almost make one weep, for he certainly could sing with expression and feeling. When he finished singing, he exhorted them in his usual manner to seek the higher, purer life. 'Look at me,' he cried, in a rich Highlander brogue, swaying wildly from side to side, 'I was a drunkard. I wallowed in the gutter like a hog. I neglected my work, all on account of the demon rum, but with the help of a Grace which I experienced tonight, I am saved, and hereafter will work for the Lord. For,' he said confidently to the audience, lowering his voice, planking down suddenly in a chair and reaching for his tail pocket, all at the same time, 'It is better to work for the Lord than for the devil,' and he earnestly took a bite of an onion, unconscious of the incongruity of the scene. At that juncture, we rescued him and kept him sober until Monday, but the next Saturday he was off again to be converted.

"What finally became of him?" asked the drummer.

"That I don't know," replied Kelly. "He came into the shop one Monday morning, nervous and trembling from a prolonged spree. At that time they were putting in the lead covered telephone cables in the city, and I had the contract wiping all joints. That morning, just as Scotty entered the office, the bell rang and a call came for a plumber to wipe a joint. Taking him with me, I went down to the lake front, where a stiff cold breeze was blowing in fitful gusts, that would slacken for a minute, then strike with sufficient force to carry you off your feet, if not prepared. Telling the helper to start the furance, I gave Scotty a pair of climbers and pointing to the crow's-nest—a platform at the top of the telephone pole, told him to wipe the joint on the cable up there. Scotty looked in a startled way at the platform, in a dazed way at me, then mechanically took the climbers from my hand and fastened them to his legs. Next he essayed to climb the pole, rose a few steps, returned to the ground, tried again, came back, then sat deliberately down and removed the spurs. Returning them to me he remarked in his rich Scotch dialect, and with an air of finality—'If ye want thot jint wiped, Mr. Kelly, wipe it yoursel', I'm no squir-rel.'"

**Not a Weighty Matter.**

"They say that Cholly has lost his mind."

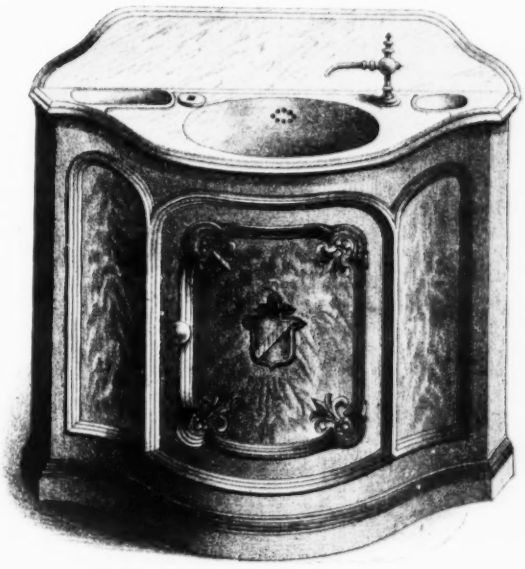
"Is that so? Does he know it?"—Boston Courier.

## In Early Days—XI

By Herbert S. Renton

# The Era of the Pan Closet

Fifty years ago it was the custom to run an open sewer through the house in large cities (New York especially) with oval bottom and stone flagging laid over it. A brick trap at the front wall, called a **Mason's trap,** was intended to keep out rats—not sewer gas at all, but rodents who had a ravenous appetite for lead pipe. Then the rats that got in some other way than through the sewer entrance were beautifully provided for in the closed-in sinks and wooden boxes—carved, painted or enameled—called **wash stands** (like Fig. 332 in Waefelaer & Duysters' 1872 catalogue). These wash stands



Waefelaer & Duysters' half circle wash stand (Fig. 332).

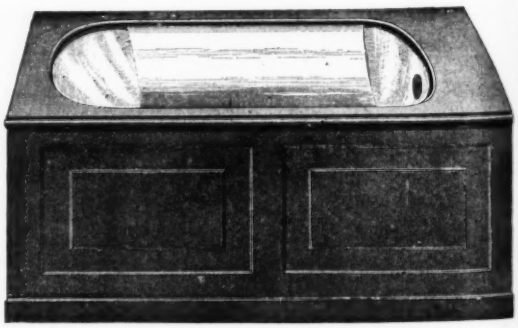
were a staple article with the early supply dealers. They were of black walnut and other woods and a marble slab on top to hold the basin made one of these **wash stands** a very ornate affair. Bath tubs, closets, everything was cased in. Some catalogues contained elaborate directions for the **carpenter** in setting closets. As late as 1881 Henry Huber & Company issued a cata-

logue with an article of manufacture called a **closet case** (Fig. 95), and in the same book a front and top for bath tub (Fig. 98). These clumsy, unsanitary boxes for all fixtures were thought to be wonderfully fine, but they were really dirt and rat breeders.

Henry Huber & Co.'s water closet case (Fig. 95).

I believe that J. J. Wade, of Chicago, is called "the father of open plumbing." He inspired an article in a Chicago journal which was copied all over the land, in which he called these closed-in sinks and wash stands the **rats' boarding house.** A comic picture, showing Mr. and Mrs. Rat at home in the bosom of their family in a sink casing, did more for sanitation than all the books that had appeared or speeches made in the history of the world up to that time. Iron sinks with iron legs and no casing were advertised in Waefelaer & Duyster's catalogue of 1872, but I think I am right in saying that J. J. Wade started the ball rolling that **knocked in** wooden sinks and stands, and though I know some wiseacres will dispute the honor in favor of Pickleville or Knowledgetown, Chicago and Wade deserve a lot of credit right here for showing the world the folly of building little hotels for rats and calling them wash stands, sinks, closets and baths. Open plumbing was supposed to be expensive, but it soon developed that the cumbersome old wooden contraptions were the expensive things. In the days when the plumbers' work (and brains, too) were boxed in, there flourished the old pan closet. The idea on which it was built was not half so bad as putting it in a case of wood. The pan closet, though we are glad it can never come back from the oblivion in which it has been swallowed up, was a pretty good article. Better, I think, than the washout, which superseded it, or the so-called Sanitary Plunger closets that were hailed 25 years ago as the **Eureka** and **ne plus ultra** of the plumbers' art. Chicago rules demand that wash-outs shall be revented or they will not be allowed. But, alas, Chicago allows some other things that make the judicious grieve even now; and Chicago is not alone, either. That we have reached the limit of improvement in sanitary science is not to be allowed, but the introduction of the **siphon closet** was the best thing the plumber ever knew or heard of. It was a better discovery for the health of the people than anything whatsoever. X-rays and wireless telegraphy are not more important than the **siphon.**

Leading up to that, however, I want to say a few things about the pan closet era, which in duration was forty years and more. The original pan closet was brought from England and was one of the first things known to the trade. It was not used extensively until the fifties. The first pan closet had no valve. It was supplied with water from a cistern overhead—usually rain water collected in a tank in the attic. There was a handle to pull up, which dumped a hinged pan and by means of a wire opened the cistern valve and thus brought down the water. A bowl was set in a receiver. The outlet of the bowl tapered and a hinged metal pan came up against the edge, so that in many cases it would hold water and was a partial seal against foul odors. A crank to which a rod and handle was attached was all the machinery required to operate the pan and flush the closet. The first improvement was a valve on the closet and one maker alone, W. S. Carr, and his successors, Henry Huber & Company, claimed to have sold four hundred thousand in 25 years, from 1857 to 1882. Mr. James Muir, of Twentieth street, New York, tells me that when he worked for Peter Milne in 1849 he saw a closet valve that Milne had imported from Perth, Scotland. In the patent office rec-

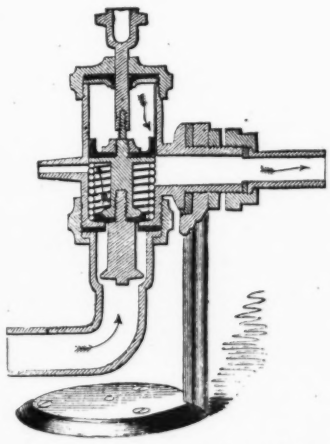


Henry Huber & Co.'s front and top for bath tub (Fig. 98).

ords I find that patents were issued to E. Stebbins, 1848; F. H. Bartholomew, of New York, February 14, 1854, October 12, 1858, also in 1861, 1863, 1864. Bartholomew claimed the air pressure feature in a hopper valve, and he had a long fight with W. S. Carr, winning out on his claim, so that all makers of hoppers and pan closets were compelled to pay a royalty to Bartholomew, except the Star and the Gordon makes, which did not employ the method used by Bartholomew. Other patents on valves were granted to D. Wellington, Boston, 1859; James E. Boyle, Brooklyn, N. Y., 1860 and 1862; J. Regester, Baltimore, Md., 1866; Charles Har-

rison, New York, 1868; D. Morrison, New York, 1868; D. Morrison and J. Smith, 1870; Charles Perkes, Philadelphia, 1872, and L. Wolff, Chicago, 1872.

Henry Jones, of J. & H. Jones, of Philadelphia, with a branch at Fourth and Mercer streets, New York, made one of the early closets with a weighted lever. By lifting the pull a spindle was driven in, opening the valve. Letting go the handle brought the spindle out again, shutting the valve. J. & H. Jones were succeeded by Charles Harrison who, I am informed, borrowed the money to buy them out, from the father of Thos. G. Knight, who has been a dealer in plumbing supplies in Brooklyn since 1877. Charles Harrison made a closet called the **Empire,** the valve working with a spring, a modification of Henry Jones' patent. W. S. Carr made the "Monitor," the "2A" and the "O. I. C.," all working with a lever pushing in a spindle in the same way as Jones' and Harrison's, but the spring was not exposed as in theirs. Morrison & Smith, who were in Bleecker street just after the war, sold a raft of their patent pan closets, on which they made a clear profit of $5 each. It was a variation of Bartholomew's, who from his Marion street works sent out thousands of these valve closets. J. D. Smith retired from the business and David Morrison moved to Sixteenth street, near Sixth avenue, making a specialty of brass faucets, as he always had done. The leader in the closet trade, however, was W. S. Carr. I have heard plumbers declare that his O. I. C. was the best pan closet ever

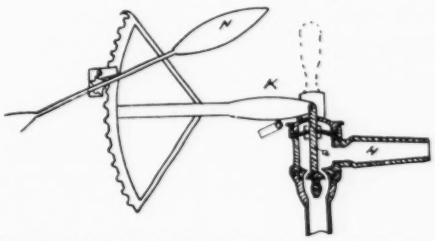


Sectional view of the Carr double-acting hopper valve. From Huber's 1881 catalogue.

made. The original firm was Carr & Sawyer, brass finishers. Sawyer was a practical plumber. Closet **engines** was the trade name of Carr & Sawyer's product.

More long and short hoppers were used with valves than pan closets in early days. The original outfit for a house was a sink and lead or brass pump in the kitchen, a cistern to contain rain water just outside and a hopper in the basement or on the first floor. If there was wealth enough a lead or copper bath tub graced the second floor, with a pan closet as a companion fixture. A tank in the attic supplied them and the water was pumped up for the purpose from the rain collector or container in the yard. When water was introduced in public mains this still continued to be the custom for some time, until the **drinking water** gradually came into use for flushing and supplying closets and baths. You never saw a sign in the sixties, "Eight rooms and **bath.**"

Hoppers were used in hospitals and public buildings very largely until recent years, and the earthen Philadelphia hopper was a staple in the basement of dwellings. The supply valves were all "pretty much of a muchness" after Bartholomew's. Read, for instance, the claim of Hugh H. Craigie, December 31, 1867:




Enoch Osgood's balancing and self-closing valve. Patented April 21, 1863.

"When the valve is raised to admit the water to the basin it fills the upper chamber, from which it gradually **runs out,** allowing the valve to close." In Bartholomew's valve the water is forced out by air pressure from a chamber in which is drilled an orifice that could be stopped up with a needle. In Carr's description we find that "the action of the spring when the stem is relieved of pressure causes the cup leather to spread open and fit perfectly tight to the cylinder, so that the water above it must pass out of the **small slot** cut in the cylinder from the outlet coupling to the cap of the valve. The supply is regulated by the size of this small slot—the larger and deeper this slot is the quicker the valve will close, and vice versa." One is a slot, the other a pin hole, but the general idea is the same. (A sectional view of the Carr double valve is found on page 21, Fig. 9 of Huber's catalogue of 1881.) The single valve was designed to run when sat upon, or opened by a lever and pull. The double valve operated when relieved of weight, the object being to flush only after use, and so save water.

There was a curious balancing and self-closing valve patented by Enoch Osgood, of Boston, April 21, 1863, No. 38,269. "The valve is a vertical chamber, closing by an upward motion with diaphragm. The pressure of water between them keeps the valve closed except when forcibly opened by pressure upon the stem of the valve, etc." Claim First was: "A valve and a diaphragm connected together and arranged as herein described to hold and resist any pressure of liquids that may come between them to pass out through the valve for use, the diaphragm to be any degree larger than the valve to give it any degree of pressure wanted, the valve closing against the current of the water when relieved of the action of the lever, K, or its equivalent." Claim Second: "In combination with the foregoing, an adjustable graduating pressure, detached to resist the closing of the valve as described, for water closets and other purposes, substantially as described."

The patents on pan closets were only for slight changes of pins and levers, etc. For instance, the D. Morrison and J. D. Smith, 1870 patent, was very short and had only one claim: "The combination of the lever E with its bracket K, for carrying the pin Z, the lever LL, axis M and arm N, for operating the valves of a water closet, as described." Hugh H. Craigie had something more original in his patent, No. 61,811, of 1867, and "introduces a **jet.**" "The horned cam and segment are moved by the cock that operates to turn down the jet pipe previous to the admission of water to the latter. The cock is turned to regulate the force of the jet of water and upon the reverse movement the water is shut off and then the jet pipe turned up to its normal by the action of the horned disc and cam." The claims were: First, "The adjustable standard and drip cup in combination of the cock f and jet pipe k;" second, "the thimble 2 in combination with the cock f, jet pipe k and plug on the pipe 3 for allowing said pipe to be turned, but keeping the joint water tight;" third, "the horned cam i and the segment 1 in combination with the cock f and pipe k, for the purpose and as set forth." Craigie was a plumber and made a reputation for himself, but never seemed to be sucessful. All these penny patents for "improvements" on the old pan closet serve to show how tenacious men are of known ideas, pounding and hammering away at some old thing that must inevitably pass to the junk pile, and the only wonder is that they don't eventually follow the obsolete object to the junk heap and try to patent the combination of the said object with the junk heap itself. The amount of brains expended in trying to boost patents on plunger closets, which came after the old pan, but was the same idea, is astonishing. They tried to float the old pan notion with water, the slogan being a "body of water"—but it sank instead of floating, which reminds me of the story told of the individual who in passing E. G. Blakeslee's iron works on Center street, New York, saw a sign, "Cast Iron Sinks," and remarked: "Everybody knows that iron sinks." A similar grade of intelligence should have relegated all mechanical closets to limbo many years before they were retired, but, as I have observed, the pan closet was a pretty good article, and I have pleasant memories of a long-continued revenue and profit from the sale of copper pans to replace old ones—albeit the same old pans when they found their way to the foundry were a nuisance because of the iron wire which stiffened the top, and also that their use had almost destroyed the copper, seeming to have taken the life out of it.

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### Nearly All On.

"Hurry up, Tommy," called mother from downstairs. "We're late now. Have you got your shoes on?"

"Yes, mamma—all but one."—Everybody's.

### Small Army.

"I have about made up my mind to give the army a bath," announced the commander of a South American fighting force.

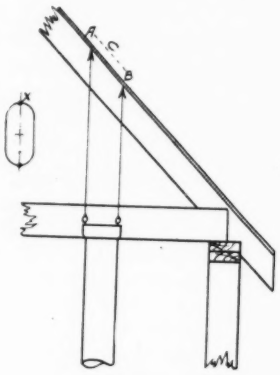
"A good idea," said the representative of an American manufacturer. "How many tubs do you need?"

"One will do."—Birmingham Age-Herald.

## Questions and Answers

### CUTTING VENT PIPE HOLES THROUGH SLANT ROOFS.

**St. Louis, Mo.**—To the Editor of "Domestic Engineering." Sir: If I had to tell my helper how to cut a hole for a vent or a soil pipe in a slanting roof, I would make a sketch like one herewith enclosed and show it to him, and would probably in his presence cut the first one for him. Any good helper will do it right after he is shown how to do it in the right way, and the right way is as follows:




From the under side of the roof drive straight up through the roof at the point where you have determined by a plumb line that the hole should be, two nails. Then pull them out. Then go on the roof and draw the straight line down from the top hole to the bottom hole. Then measure off 2½ inches from each side of this line and round off the corners by the eye. Then bore a half-inch hole at the point marked X and start drawing, running your saw straight up and down, following the line until the hole is completed.

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He: "But I need you in order to be happy."

She: "I couldn't think of marrying a needy person."—Boston Transcript.

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### A JOURNEY THROUGH NEW YORK STATE.
**By E. DeForest Winslow.**

(Key to pictures on opposite page.)

**The Top Row of Pictures.**

"Copper" John Oswald, of Syracuse, was a distinguished figure on the side lines during the recent ball game between the master plumbers of Auburn and Syracuse, N. Y.

"Hay, Hay—Everywhere." Tom Lodge, a philosophical member of the plumbing fraternity at Troy, N. Y., who threatens to forsake his business there to lead the life of a rustic.

"A Secluded Nook." On the banks of a winding river at Cobleskill, N. Y., we find L. D. Letts, Jr., a successful master plumber of that place, enjoying his noon hour.

**The Center Picture.**

Family basket picnic of master plumbers from Syracuse and Auburn, N. Y., recently held on the shore of the beautiful Lake Owascow, near Auburn.

**Bottom Row of Pictures.**

"Buried in the Straw." The winner of the potato race shuffle. It all happened at the master plumbers' basket picnic at Lake Owascow.

"Too Many Cooks Spoil the Broth." Ex-State President B. Joseph O'Donnell, of Syracuse, N. Y., is seen instructing S. B. Wheeler, president of the Auburn association, in the culinary art. The photograph was taken at the before mentioned basket picnic.

"A Safe Hit." This was a common incident at the recent ball game between the master plumbers of Syracuse and Auburn, N. Y.

# A Journey Through New York State

By E. De Forest Winslow.

(For Key to pictures see opposite page)

## Wholesale Plumbing

**The Perth Amboy Pottery Works** has succeeded to the business of the Perth Amboy Ceramic Company, of Perth Amboy, N. J.

**Lafayette Smelting and Refining Works,** of Jersey City, N. J., has been incorporated, with a capital of $100,000. The incorporators are: Edward Alpert, Morris Pashelinsky and Morris Levin.

**The Kerner Manufacturing Company,** of Harmony, Pa., has been incorporated to manufacture porcelain enameled bath tubs, lavatories, closets, sinks, etc. The new concern will erect a plant at Harmony. Those interested in the venture are J. A. Frauenheim, formerly manager of the Iron City Sanitary Manufacturing Company, of Zelienople, Pa.; Peter Koerner and H. T. Frauenheim.

**The Springfield Gas Appliance Company,** of Springfield, Mass., has started the manufacture of automatic instantaneous water heaters at its plant in that city. The new company has opened sales office at 18 Warren street, New York City, in charge of S. Bernstein, who has been connected with this line of trade for many years, and it has also opened an export office at room 22, 68 Broad street, New York City.

**R. Dee Pierce,** secretary of M. Glauber & Company, of New York City, who is at present on a tour of the western states, reports that "conditions all the way from St. Paul and Minneapolis down to Dallas, Tex., could not be better. Oklahoma City has a plumbing strike at present; otherwise things are in the best possible shape. We in the east will surely have to hustle to keep pace with our western friends. Plumbing is no longer a luxury in the west, but a necessity."

**The Elwaine-Richards Company's plant** at Noblesville, Ind., has been ordered sold at public auction by the Superior Court of Marion county, Ind., on Wednesday morning December 23, at 10 o'clock, at the court house in Indianapolis, Ind. The plant manufactures bath tubs, lavatories, coil pipe and fittings and has been in the charge of The Union Trust Company of Indianapolis as receivers for six years, during which time they have paid over fifty per cent of the indebtedness.

## Wholesale Heating

**The Sackman Manufacturing Company,** of Akron, O., has been incorporated, with a capital of $25,000, to continue W. L. Sackman's business of making stamps and dies, etc.

**H. L. Price,** for several years with the Alonzo H. Magee Company, of New York City, has accepted a position with Albright, Son & Company, of Allentown, Pa., to cover the eastern states in their behalf.

**The Hiawatha Heating Manufacturing Company,** of Norway, Me., has been incorporated with a capital of $50,000. The officers of the company are F. W. Engler and W. W. Phillips, of Winthrop, Me., and M. L. Kimball, of Norway, Me.

**The Magnesia Company,** of New York, has been incorporated with a capital of $2,000,000. The directors of the company are: Gustave B. Janson and Stanton Kohler, 1 Madison avenue; H. W. Corbett, 122 East Twenty-fifth street, New York.

**The Davis Steam Generator Company,** of Toledo, O., has been incorporated, with a capital of $100,000, to manufacture steam heating boilers. The incorporators are Samuel S. Davis, Walker Morrison, L. J. Pugh, A. H. Razor and John M. Ormond.

**The Illinois Chapter** of the American Society of Heating and Ventilating Engineers will hold its regular November meeting on Monday evening, November 9, in the private dining room of the Union restaurant, 111 Randolph street, Chicago. Supper will be served at 6 p. m., and this will be followed immediately by the meeting.

**A spirited and close golf contest** was recently "pulled off" on the Links of the Calumet Country Club by D. E. McCabe, of the International Heater Company, of Chicago, and J. P. Dugger, of the Kewanee Boiler Company, of Chicago. These gentlemen have been fast friends and keen competitors for many years in both the boiler business and the golf game. Both are members of the Calumet Country Club and have had many hard fought battles over the links. This contest was a 36-hole match, at the end of which the contestants were "all square," and an extra hole was played to decide the game. This was won by Mr. McCabe.

Stroke score:

| | | | | |
|---|---|---|---|---|
| McCabe | 52 | 55 | 50 | 49—206 |
| Dugger | 52 | 56 | 47 | 51—206 |

Extra hole: McCabe 6, Dugger 7.

The following gentlemen attended the event, acting in the capacities indicated: Sam. O. Dugger, caddy for McCabe; Jas. Dougherty, caddy for Dugger; J. B. McCabe, scorer and referee; A. W. Magill, official photographer.

## Steam and Mill Supplies

**Geo. H. Radtke,** of Oshkosh, Wis., has opened a pump supply business in that city.

**The Erie Clutch and Pulley Company,** of Erie, Pa., has succeeded to the business of the Taper-Sleeve Pulley Works in that city.

**The Monarch Valve Company,** of Warren, Mass., reports business good; in fact, the company has been compelled to work overtime for several weeks past to keep pace with orders.

**The Automatic Tap-Valve Company,** of Buffalo, N. Y., has been incorporated, with a capital of $100,000. The directors of the company are: Charles F. Terney, August W. Bramm and Ewald W. Terney, all of Buffalo.

**The Dodge-Sander Company,** of Worcester, Mass., with which has been consolidated the Worcester Injector and Valve Company, has moved to new and larger quarters at 172 Union street, where it occupies floor space 37x112 feet.

**George J. Smith Company,** of New York, has been incorporated, with a capital of $10,000, to deal in mill supplies. The directors of the company are: Robert T. Wood and William L. Sayers, 31 Nassau street; George J. Smith, 25 Broad street, New York.

**Brownrigg & Stevenson Company,** of New York City, has been incorporated, with a capital of $10,000, to deal in steam supplies. The incorporators are: C. Maxwell Stevenson, Leo. W. Brownrigg and Robert E. Samuels, of 29 Broadway, New York.

**The Clifton Forge and Foundry Company,** of Clifton Forge, Va., has been incorporated, with a capital of $25,000, to manufacture machinery. The officers of the new company are C. H. Smith, president; L. D. Smith, vice-president; secretary-treasurer, B. C. Goodwin, all of Clifton Forge.

**The Essmueller Mill Furnishing Company,** of St. Louis, Mo., will at once begin the erection of a new plant at 1216-1224 South Eighth street, to cost about $20,000. The building will be 100x200 feet, two stories high and of brick and steel. The company is now located at 605 South Sixth street. The new plant will double the company's present capacity.

**Iron and engine works in Japan** are reduced to a trying position in consequence of the trade depression, and many are passing into the hands of wealthy business men at comparatively low prices. Takata & Company have purchased the Meiji Iron Works at Yanagishima, Honjo, Tokio, for the small sum of $15,000. The new owners have decided to extend the works and establish cast iron and boiler making businesses, and in the event of the experiment proving satisfactory the company intends to establish iron works on a large scale.

## Metal Market

**New York Metal Market, November 4.**

| | |
|---|---|
| Copper, Prime Lake | $14.00 |
| Copper, Lake, Arsenical brands | 13.87½ |
| Copper, Electrolytic | 13.75 |
| Antimony, Cookson's | 8.12½ |
| Lead | 4.40 |
| Spelter | 4.82½ |
| Straits Tin | 29.60 |

**Chicago Iron Market, November 5.**

| | |
|---|---|
| Southern, No. 2 Foundry | $16.85-17.35 |
| Lake Superior Charcoal | 19.50-20.00 |
| Lake Superior Coke Iron, No. 2 Foundry | 16.50-17.00 |

**November 5, 1908:**

Foundry iron was the same price as week previous
$6 less per ton than the year previous
Copper was ½c more a lb. than the month previous
2½c more a lb. than the year previous

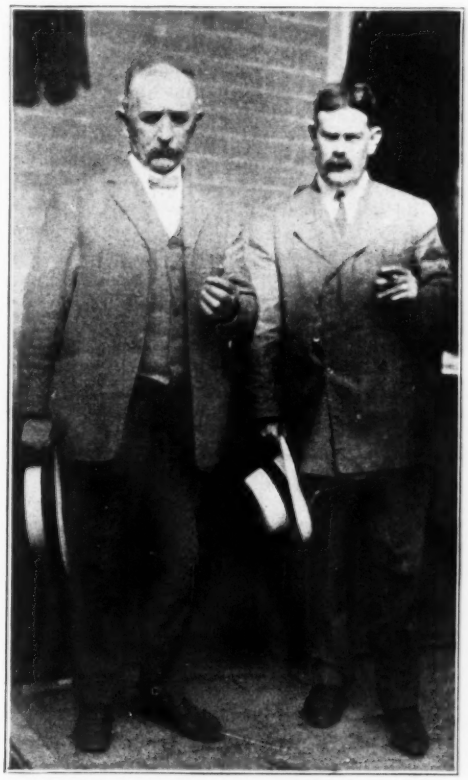
## Personal

**Martin S. Hauser,** of the Sanitary Company, of Cleveland, Ohio, was in Chicago this week calling on some of his many old friends in the trade and incidentally adding a few new ones to his large list.

**F. E. Snow,** treasurer of the Wells Brothers Company, of Greenfield, Mass., who has been indisposed and unavoidably absent from his office for several months past, is again at his desk, looking very much improved in health.

**Emerson D. Hall,** formerly of the Miller Foundry and Specialty Company, of North Tonawanda, N. Y., has been appointed manager of the new branch store opened at 2338 Main street, Buffalo, by the Pittsburg Water Heater Company, of Pittsburg, Pa.

**Theodore Ahrens,** president of the Standard Sanitary Manufacturing Company, of Pittsburg, Pa., reports from Tucson, Ariz., that his long rest out there, which he was compelled to start out on last winter, has been of great benefit to him, and that he hopes for ultimate recovery. His many friends in the trade will be glad to receive this good report.



"In the Hall of Fame." These familiar countenances will be immediately recognized as the property of John H. Moran, a successful contracting plumber of Albany, N. Y., and of Commodore Gray, popular envoy of Hoy & Co., also of that city. Photograph by our Mr. Winslow.

**John M. Weekes,** vice-president of the supply firm of John Weekes & Son Company, Watertown, N. Y., was recently married to Miss Marie Oakes, a charming young lady of that city. Following a delightful trip they returned to Watertown, where their permanent residence will be made.

**A hunting party,** consisting of Mr. Craighead, of the Craighead Plumbing and Electric Company, of Richmond, Ind.; Mr. Dubackus, of the Barnes Manufacturing Company, of Mansfield, O., and six Richmond (Ind.) gentlemen, have just returned from a month's sojourn in northern Wisconsin. It is related that they caught bass "by the gross," weighing from four to five and one-half pounds, and muskalonge as heavy as eighteen pounds.

## Obituary

**Orville P. Moon,** manager of the Standard Lighting Company, of Cleveland, O., passed on at his home in that city on Monday, October 26, in his forty-second year. Mr. Moon's business career was a very successful one, owing to the fact that he possessed an unusual amount of executive ability and also an unassuming disposition which made him many friends. He is survived by his wife and six children.

**Dean Wilson,** for the last twenty years chief plumbing inspector of the department of health of Buffalo, N. Y., passed on at his home in that city on Monday evening, October 26, after having been in poor health for some time. He resigned from his position in the health department a few weeks ago. Mr. Wilson had an excellent reputation as a plumbing inspector. He saw to it that the plumbing laws of the city were enforced to the letter, but he never insisted on anything that he did not consider absolutely just and right, and as a consequence he had the respect and friendship of all the reputable plumbing contractors in the city. Mr. Wilson was a veteran of the civil war, having served throughout the conflict as a lieutenant in Corcoran's Irish Legion, Company I, 155th New York volunteers, and he was noted for his bravery. He is survived by his wife, two sons and two daughters.

## Association News

**Milwaukee, Wis.**—The proceedings of the twenty-sixth annual convention of the National Association of Master Plumbers of the United States are being issued by President W. H. Halsey. The report comprises 262 pages and is 54 pages larger than the edition of last year. More than 10,000 copies have been prepared, and it is expected that even more than this number will be sent out. The entire work of compilation and publishing was done in this city under the direction of President Halsey, whose portrait serves as frontispiece opposite the title page.

**Spokane, Wash.**—This city will be the scene of the next convention of the National Association of the Master Plumbers of the United States in the summer of 1909, if the endorsement by the state and local branches of that organization in the Pacific northwest and of a large number of national delegates in this part of the country and the middle western and eastern states and several executive officers carries any weight. Members of the national association in Washington, Idaho, Oregon and Montana believe that Spokane's invitation will be accepted for the reason that its position, already excellent, will be greatly strengthened by the granting of special rates, one fare or better for the round trip, from practically all railroad points on the continent, to the Alaska-Yukon-Pacific Exposition at Seattle, with stop-over privileges in this city. Furthermore, they say, the hospitality of the people of Spokane is widely known. Then, too, there are the delightful outings and excursions to the numerous near-by lake and river resorts and the great wheat fields, mines and orchards in the district, all within a few hours' ride of Spokane. William B. Coffee, of Tacoma, chairman of the delegation sent east to root for Spokane as the next convention city, was chosen at the recent state convention in Spokane to communicate with the national officers regarding the holding of the convention in Spokane, and the co-operation of numerous state branches has been secured. The most active workers locally in securing the convention are James Smyth, who left for Seattle and Portland last week to seek the co-operation of the Chamber of Commerce and master plumbers' associations of those cities, and E. V. Lambert, who has been in correspondence with all the state vice-presidents of the national organization.

### THE SEWER GAS QUESTION.

**Boston, Mass.**—David Craig, former national president of the master plumbers, and chairman of the sanitary committee of the association, who recently conducted an investigation on the question of sewer gas and read a lengthy and valuable paper on the subject before the last annual convention, spoke on the subject before the members of the Massachusetts Association of Boards of Health at their quarterly meeting held at the Hotel Brunswick on the afternoon of October 29. Prof. C. E. A. Winslow, of the Institute of Technology, who assisted Mr. Craig in his experiments and in preparing his paper for the plumbers' convention, was also a speaker. Prof. Winslow went into detail as to the nature of the many experiments conducted by him and Mr. Craig. He announced it as his opinion, after an exhaustive study and investigation for the master plumbers, that although to a limited extent bubbles and splashing can throw bacteria from the sewage into the air, it can only do so in such quantities that to breathe such sewer air for a period of 24 hours would put less bacteria into the system than would the drinking of water supplied by the city of New York.

Mr. Craig told the members of the boards of health what the National Association of Master Plumbers has been doing to get a true and exhaustive scientific study of sewer air and its relation to the spread of certain diseases. He said that the association planned to publish its findings and those of the scientists engaged in the work.

Speaking of modern plumbing, Mr. Craig said that in his opinion it is far more expensive than is necessary and that the house beams are frequently weakened to accomodate much of it solely because much of it is installed in accordance with regulations founded upon ignorance of the true character of sewer air. No plumber ever invented the modern closets, he declared, for a plumber is taught first of all to avoid joints and bends in piping. From the standpoint of a plumber he believed the freer the flow from basin to sewer the better.

The work and remarks of both Professor Winslow and Mr. Craig were warmly commended by Professor Sedgewick, of the Massachusetts Institute of Technology, who was one of the guests of the afternoon.

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"Father," stammered the young girl, "the duke has proposed."

"Well, don't get excited until you find out whether he has the consent of the king, the permission of the queen and the acquiescence of the other fifty-seven members of the royal family," answered the shrewd old man, who knew the ropes.—Detroit Free Press.

## Public Comfort Stations

**Washington, D. C.**—Plumbing Inspector Henry B. Davis, of this city, reports that plans are being prepared for a new underground public comfort station, which will be erected in the near future, and he asked for one more this year, as well as for a new public bath house. In his annual report for the year from July 1, 1907, to June 30, 1908, Mr. Davis gave the following interesting statistics about the use of the two public comfort stations now in operation in this city:

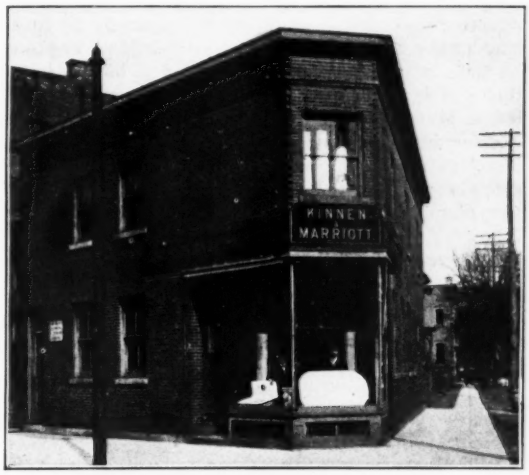
The total number of patrons reported for both stations for the past year is 1,924,177, being practically a million for each station for the year, or actually 5,272 per day, 293 per hour, nearly 5 per minute for both stations during the time they were open. Twelve and one-half per cent of the total number of users were women, who contributed a little less than seven per cent of the receipts from pay compartments and clean towel fees. The money received from the five-cent fees for the use of the pay compartments and the two-cent clean towel fees amounted to $746.75. The cost of maintenance amounted to $6,200, no part of the fees being used for the purpose, but being turned in as miscellaneous receipts. The total cost for operating the stations, including wages, supplies, repairs and all charges, amounted to 3.1 mills per person using them, and by subtracting the receipts from the expenditures, it amounted to about 2¼ mills per person. The estimates for expenses for the next year amount to $7,500, and are sub-divided as follows:

| | |
|---|---|
| Salaries, 8 employes, 2 each, at $2.10, $1.90, $1.25 and $1.10 | $4,635 |
| Salaries substitutes (for legal holidays) | 200 |
| Salary superintendent (to add to salary of officeman) | 300 |
| Electric current | 820 |
| Coal | 700 |
| Laundry | 120 |
| Soap | 180 |
| Cleaning material, oil, waste, polishing cloths, etc. | 45 |
| Brooms, mops, general supplies, printing, etc. | 100 |
| Toilet paper | 200 |
| Repairs for buildings, plumbing, motors, boilers, etc. | 200 |
| | $7,500 |

## Plumbing Inspection

**Malden, Mass.**—Acting upon the report of Plumbing Inspector Bullard, Building Inspector Conner has called upon the board of health to order the removal of the soil pipes at the high school and the substitution of new pipes. He believes that the present arrangement is dangerous to the health of the children and the changes will be made at once.

**New Orleans, La.**—The Aschaffenburg Company, a well known plumbing concern in this city, has just brought suit against the Sewerage and Water Board of New Orleans to compel, by writ of mandamus, the board to give the company the location of a "Y" in a sewer near the Octavia apartments, at St. Charles avenue and Octavia street, in order that the company may effect connection between the apartments and the sewer. This is the first suit to be filed against the board in order to obtain directions for installing sewer connections. It is set up by the plaintiff company that they are licensed plumbers and that they have conformed to all of the rules and regulations established by the board, but that notwithstanding this the board, through its inspector, refuses to give the information required. The prayer of the petition is that the board be ordered to give the company the location of the "Y," and that after connections shall have been made by the company between the apartments and the sewer, that the board be compelled to inspect the work and to issue a certificate, as required by the rules and regulations of the board.




The "Flatiron Building," the home of the up-to-date plumbing establishment of Kinnen & Marriott, at 36 Franklin street, Rochester, N. Y.

## Plumbing Legislation

**Washington, D. C.**—The local Board of Education at their recent meeting adopted a number of measures of importance. Following the trend of hygenic advancement the board placed themselves on record as favoring the "bubble" type of drinking fountain for schools, and also expressed their wish that the vacuum system of cleaning be adopted.

**New Castle, Pa.**—The City of New Castle Water Company has issued orders to all owners of hopper closets that they will not be allowed here under any circumstances whatever, and that all that are now in use must be removed and **replaced with tank closets of an accepted and approved make,** or they cannot be used with the water furnished by that company. This means the absolute elimination of this type of closet at once, as the water is being shut off from all hopper closets. The city has decided immediately to enforce more sanitary regulations and practices, and other changes are looked for in the near future. The water company has also announced that **it will, under no circumstances, permit any connections to be made with its mains or service lines unless by a recognized and registered plumber.** There has been considerable com-

plaint of late about owners and occupants of property taking out and replacing fixtures themselves. This has been an injustice to the legitimate plumber and one that cannot be overlooked, even from a sanitary or a monetary standpoint. All violators of this rule will be prosecuted to the full extent of the law. There has been similar complaint from plumbers all over this part of the state, and steps have already been taken in quite a number of western Pennsylvania cities and towns toward stopping it. Many mechanics have been out of work for some time and have taken this opportunity for repairing plumbing and sewage systems with which they have had some trouble and expense. This has not only resulted in plumbers losing work that should legitimately come to them, but has also resulted in poor work being done by inexperienced workmen, and resulting unsanitary conditions in hundreds of cases. The master plumbers, therefore, after holding meetings in many of the municipalities in this vicinity, decided that under no circumstances whatever would they attempt to make any repairs or changes on work that had not been done by a master plumber, or where the plumbing contractor was asked to install fixtures and supplies that were not furnished on the contract by the plumbing contractor. Others will immediately follow this example, and it will be but a short time until it will be generally adopted in this district.

## Who's Who in America—I

E. H. Benhoff, a successful and popular master plumber, of Cleveland, O., with an up-to-date establishment at 2852 West Twenty-fifth street. Mr. Benhoff is an ex-president of the Cleveland Master Plumbers' Association and he is now chairman of its entertainment committee. He has the reputation of being "always on the job."

## The Middle States

**Amesville, O.**—A branch of the plumbing business of Savage & Company, of McConnelsville, has been opened here in the Bank building.

**Boonville, Ind.**—Louis Schuyler has secured the contract for the installation of a new heating plant in the poor asylum. The consideration is $895.

**Richmond, Ind.**—The Craighead Plumbing and Electric Company has secured the contract for plumbing, heating and electric wiring in Mrs. J. M. Garr's new residence. The consideration is $5,000.

**Jackson, Mich.**—Jas. J. Keeley, at 513 North Jackson street, has recently entered the plumbing business, but has not yet bought his stock of goods. He will be glad to get catalogues and price lists from manufacturers and wholesale dealers. Mr. Keeley is an alderman in the city of Jackson, and has occupied this position for six terms. He has been making boilers for about thirty years, and is the proprietor of the Jackson Flue Scraper Company, manufacturing the "Old Spiral" flue scraper, which he claims is the only scraper that will pass a weld in a flue and do its work thoroughly without breaking, as it adjusts itself to imperfectly shaped flues without causing any extra labor in operation.

## The Great Northwest

**Madison, Wis.**—Anton Metz, of this city, has just secured the contract for remodeling the plumbing in the Wisconsin block.

**Milwaukee, Wis.**—The Thomas E. Hoye Heating Company has been awarded the contract for the installation of a new heating system in the Milwaukee zoo at Washington park.

**La Crosse, Wis.**—The Baker-Niebuhr Company has been awarded the contract for installing the independent heating plant for the new public library here. It is expected that the new plant will be completed by early spring.

**Mitchell, S. D.**—Hess, Rau & Company, of this city, has secured the contract for the installation of plumbing and heating systems in the new high school building which will be erected here during the coming winter. The consideration is $15,787.50.

**Milwaukee, Wis.**—Bids will soon be opened on the new St. Mary's hospital in this city, to be completed at a cost of $500,000. It is expected that the plumbing and heating contracts will be among the largest of the season. Several Milwaukee firms have entered bids.

## Southern Notes

**New Orleans, La.**—The Novelty Plumbing Company has been incorporated, with a capital of $30,000. The incorporators are A. M. Rennyson, I. B. Rennyson and John J. Reilly.

**Roswell, N. M.**—The Independent Hardware Company, of this place, has added a plumbing department and secured membership in the Colorado Master Plumbers' Association.

**Washington, D. C.**—A residence for O. H. P. Belmont, to cost approximately a million dollars, is under

construction here. The plumbing will be installed by William P. Ogelsby, of Philadelphia.

**Washington, D. C.**—John W. Cooney, of New York, has been awarded the plumbing contract for the Bureau of American Republics, and John Gaghan will install the plumbing in A. M. Lothrop's new handsome residence.

**Charleston, W. Va.**—The West Charleston Plumbing Company, of this city, has been awarded the contract for the plumbing and heating systems that will be installed in the fine new residence being built here for J. D. Price.

**Baltimore, Md.**—The Crook-Kries Company, of 227 West Saratoga street, has secured the contract for heating and ventilation in the new St. Rose Industrial School in Washington, D. C. The contract amounts to $17,000.

**Wheeling, W. Va.**—The contract for installing the complete plumbing system in the large new three-story brick and stone apartment building and business block that is being built here for Frank Digmille and Max Beunter, both of this city, has been awarded to Kiel Brothers.

## Pacific Coast

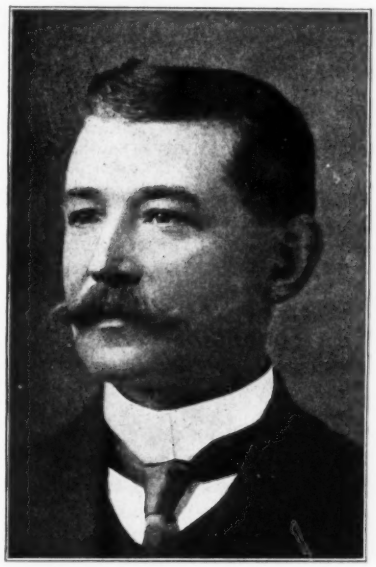
**Sausalito, Cal.**—The Marin Gas Company is preparing to install a $45,000 gas plant here and local pipe men are figuring on the contract for furnishing pipe for the distributing system.

**San Francisco, Cal.**—Ford & Hammond have just secured the contract for the plumbing, gasfitting and water piping in the Mercedes Building now in course of erection on Post street, near Grant avenue.

**Petaluma, Cal.**—This city is taking steps to secure a municipal gas plant to cost $75,000 and an election will be held shortly to bond the town for that amount. Among the other propositions that will be considered at the same election will be that of providing for the installation of a high pressure salt water pumping plant for fire protection.

**San Francisco, Cal.**—At a meeting of the Board of Supervisors held this week the new plumbing law came up for discussion and was the cause of much heated discussion. Supervisor Center, while not a member of the committee acting on plumbing laws, was present on the invitation of Chairman Rixford and represented the Mission Promotion Association in opposing the ordinance. The principal new feature of importance in the measure was that it provided for a double system of drainage in the downtown districts to accommodate separately storm water and sewerage. Otherwise the bill is much the same as the one now in force, there being some slight changes made to conform with ideas that were found advisable in the installation of plumbing in the new type of re-enforced concrete building that has become so popular here since the fire. Supervisor Center did not find any reason for favoring the new measure because of its resemblance to the old one and in his talk waxed quite warm as well as personal. "That law," he said, "is itself highly objectionable, being merely a cinch bill introduced for the purpose of giving the plumbing trust a tighter grip on San Francisco. Mr. Britt knows all about that." Naturally this remark did not please Mr. Britt and he refuted the statements made by Mr. Center. J. L. E. Firmin was also present and warmly resented the remarks made by Mr. Center, declaring that what the Supervisor said was "needlessly and unjustifiably insulting." Some slight changes in the proposed law were made to concede to the wishes of the Mission representatives and the building laws committee then agreed to recommend the measure to the Board of Supervisors at the meeting to be held next week. The attack upon the measure on the part of Supervisor Center is not without cause for he is personally interested in the development of the Mission district and is a builder of cheap flats. Naturally any measure, no matter how beneficial it might be to public health, would be opposed by such a man if there would be any increase in the cost of plumbing. This district is causing more trouble to the inspectors than any other district in the city and a close watch has to be kept on building operations there to see that the laws in regard to sanitation are properly enforced. This section of the city is low, where all possible precautions to preserve health should be carried out, but any such measures as the one proposed is sure to meet with a storm of disapproval from contractors and tenement owners such as Supervisor Center.

## Who's Who in Britain—V



James Algie, Secretary of the Operative Plumbers' Benevolent Committee, Glasgow district. He obtained a certificate for technical knowledge and a Bronze Medal for practical work in plumbing from the City and Guilds of London Institute, and became a registered plumber in the year 1889. He was appointed Inspector of Drainage and Plumbing Work by the Corporation of Glasgow in 1900. He is a member of District Council for Glasgow and the West of Scotland for the Registration of Plumbers.

## New Jersey

**Burlington, N. J.**—Geo. W. Groves, of East Union street, has just installed a new steam heating system in the Methodist Episcopal church and parsonage at Beverly, N. J.

**Camden, N. J.**—Frank E. Zimmerman, of 1224 Kaighn avenue, is just completing the plumbing in the residence at 1184 Kaighn avenue and also the hot water heating plant in the residence at 1239 Kaighn avenue, as well as the heating, plumbing and gas fitting at 918 Chestnut street, and considerable jobbing.

**Burlington, N. J.**—The plumbing firm of Benckert & Newton, of East Union street, has just finished the first year in its business career, which has been a most successful one. Among its most recent contracts were the plumbing in six new houses on West Federal street and the installation of a hot water heating system in the residence of Sheriff Norcross. The firm has just secured the contract for a hot water heating system in a new residence at Beverly, N. J. Recently, while remodeling the plumbing in one of the finest residences in this city, an employe of the firm had to tear out a four-inch soil trap of lead, which is quite an interesting relic from the past generation. The trap is now a part of the firm's trade museum, and it bears the title, "Exhibit A."

"Exhibit A." An old time lead soil trap with all kinds of joints, showing some attempt at joint wiping and some putty work. Taken from a residence in Burlington, N. J., by Benckert & Newton when overhauling the plumbing. Photograph by our Mr. G. Wallace Smith.

**North Woodbury, N. J.**—Jno. J. Magee has the contract for plumbing in the residence of Mrs. Lathan, and also extensive alterations to the steam system in the Blasius piano factory in Woodbury. Mr. Magee's place proves to be a haven for automobiles in distress and his thoroughly equipped machine shop in connection with his heating and plumbing is a veritable hospital for autos and sends them away in a jiffy. Mr. Magee has a little son of five summers, who told "Domestic Engineering's" representative that he always thought a trained nurse was one that rode on the top of a train until one came to nurse his big sister, who had the diphtheria.

**G. Wallace Smith.**

## Labor Field

**The Department of Commerce and Labor,** in a statistical report on the comparative wages received in the United States and four European countries, publishes a table which shows the thirteen principal trades, which includes the plumber, and details the average weekly wage, that of the plumbing being given as $21.70 in the United States, $9.93 in Great Britain, $7.35 in France, $5.62 in Germany and in Belgium as $3.84. The plumber's wages are fourth from the highest in the list, that of the bricklayer at $26.26 being first, the stonemason being second at $22.89 and the compositor third at $22.33. These calculations show that the workmen in this country receive today just one dollar to the 50 cents in Great Britain, 38 cents in France, 34 cents in Germany and 20 cents in Belgium, and averaging the pay received in the four European countries, our workmen earn a dollar as against the 38 cents received abroad.

## Contemplated Work

**Washington, D. C.**—Sealed proposals will be received at the office of the supervising architect until 3 o'clock p. m., November 27, 1908, for the construction complete of the United States postoffice at Milford, Del., in accordance with the drawings and specifications.

**Washington, D. C.**—Sealed proposals will be received at the office of the supervising architect until 3 o'clock p. m., November 30, 1908, and then opened, for the construction (complete) of the United States postoffice at Manchester, Va., in accordance with the drawings and specifications.

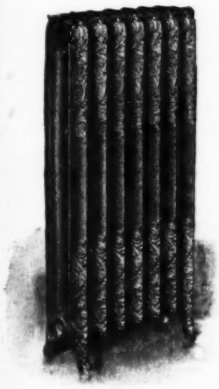
**Washington, D. C.**—Sealed proposals will be received at the office of the Supervising Architect until 3 o'clock, p. m., December 1, 1908, for the construction (including plumbing, gas piping, heating apparatus, electric conduits and wiring) of the U. S. postoffice at Newton, Kansas, in accordance with drawings and specifications.

## Trade Literature

**From American Radiator Company,** 282-286 Michigan avenue, Chicago: "Ideal Round Boilers for Steam and Water," "Ideal Sectional Boilers for Steam and Water" and "Ideal 48-Inch Sectional Boilers," three handsome de luxe edition booklets, each 32 pages, 8x10½ inches. Everything about these booklets is the acme of perfection, the cover designs, entitled "The Spirit of Steam" and "The Spirits of Water Welcoming Heat," being the finest work of this kind which the editor has seen for some time. The two first-named booklets present pictures and the most important facts of construction, operation and general value of the company's present line of cast iron boilers in rectangular and round forms, and the booklet "Ideal 48-Inch Sectional Boilers" presents the merits of the company's large line of sectional boilers having 48-inch grate and listed in "The Ideal Fitter" with 50-inch fire chambers. Members of the heating trade can secure a set of these attractive booklets on application, mentioning "Domestic Engineering."

# High Grade Material

In the construction of IDEAL Boilers and AMERICAN Radiators, only such material as will stand severe analysis and tests is used. Every pound of metal is carefully selected to produce uniform, smooth and wear-resisting castings.



AMERICAN Rococo Radiator an example of superior casting

As a result, the castings in every IDEAL Boiler and AMERICAN Radiator are of uniform thickness, have smooth surfaces, toughness, and a high heat-passing efficiency — the factors which assist to make every job, where they are used, satisfactory to the owner and a good advertisement for the heating man.

AMERICAN RADIATORS & IDEAL BOILERS

AMERICAN RADIATOR COMPANY

**General Offices, 282-286 Michigan Ave., Chicago.**

| | | | | | |
|---|---|---|---|---|---|
| New York | Cincinnati | Cleveland | Atlanta | Brantford, Ont. | Denver |
| Philadelphia | Boston | Milwaukee | Minneapolis | Seattle | St. Louis |
| Pittsburg | Buffalo | Indianapolis | Kansas City | Omaha | San Francisco |

## Optimism a Powerful Mainstay

(Concluded from page 145)

men, backed by the most skilful engineering brains of the country, hundreds of the most powerful steam shovels, up-to-date railroading and the most approved machinery of this age, began to tear up the Isthmus of Panama at a rate that made the nations stand aghast. Thousands of tons of dynamite tore the great rocks asunder and the apparently formidable obstacles melted away like dew before the rising sun.

**In 1912 the world's greatest engineering feat will be an accomplished fact. The optimism of the Yankee will be supreme and the Panama Canal, the greatest advertisement this country ever had, will unite the Atlantic and Pacific through the domain of Uncle Sam.** Thousands of boats, laden with commerce, will pass through this waterway and the **grand race for commercial supremacy in the Spanish speaking countries south of us** will begin in earnest, with **Uncle Sam outdistancing the balance of the world.**

Yes, chills creep up the spinal columns of the English and Germans every time they think of Yankee optimism and how near to **completion is the Panama Canal.** They know they will no longer be able to keep the thousands of manufacturers of the United States from invading those southern countries and selling them direct. The old strategem of working hand in hand with a few export houses in New York to minimize and cover up, as far as possible, the wonderful opportunities for trade in those lands, is about ended. Thousands of traveling men will follow on the opening of the canal, and the **commercial conquest will be a certainty for the Yankee,** with Central America and two-thirds of South America from 3,000 to 5,000 miles nearer than the most active European nations seeking to control the field. The commercial conquest of these countries will even be more adroitly accomplished and more rapidly achieved than were the inroads upon Canada, Mexico, Cuba and Porto Rico. **The Yankee sees with a discerning eye the certain diminution of trade with Europe,** especially in manufactured products, and knows the most valuable field for him lies near at home, where he has the advantage of distance over all competitive nations.

**The trade needs an injection of executive brains to cope with the pessimistic inclination to tolerate many abuses that might be eradicated by concerted action.** Too many people in the trade are bound down by chains, every link of which is stamped with the **obstructionist's favorite word, "can't." They** have done business so long in the old rut, where **"price"** has been the **alpha and omega** of their business dealings, that they are afraid to take an advanced position on any subject. They have allowed themselves to become pessimistic to the backbone and are not willing to attempt a remedy.

**Why should man be pessimistic when he is surrounded with the most pronounced phases of optimism? The myriads of suns** that twinkle in the heavens are **God's instruments** playing harmoniously and beneficently the **"music of the spheres."** The glorious rays of our own great **luminary breathe optimism** of the most potent type to the trees, grass, flowers, animals and mankind. Every organism, every component part of **nature's great mechanism** is one grand and jubilant manifestation of the **creator's optimism.** You see it at every turn of the eye and yet there are thousands in the trade **who hesitate to advance in unbeaten paths and lift themselves from the thraldom of pessimism.**

**Elmer Crawford.**

---

### BACK TO HIS TRADE.

He was an ad-school graduate who had come in from a rural retreat some weeks previously with the laudable intention of teaching the business men of the city how they ought to advertise and how to dispose of their publicity appropriation.

He had experienced a fairly strenuous time of it, for, alas, his youth seemed to belie his avowed experience in the craft. Nevertheless he had been assured by his teachers that commercial men in the city were just hungry for the particular brand of advertising service which he had learned and was now anxious to impart to others, for a consideration.

His tutors by mail had told him how uniquely smart he was. In fact they had complimented him on the great versatility of his talents almost every time they acknowledged a remittance for tuition; and yet, somehow, he found no outstretched hands waiting to lead him to a $50-a-week job when he reached the city.

He had established himself in a small office, sending out pretty circulars announcing his presence and his peculiar mission among business men. He had received no responses. Then he made personal calls upon some of the leading advertisers with the idea of showing them the error of their ways in advertising matters. But they did not seem to view things as he did. Some, in fact, were very rude and brusque with him. It was painfully evident that they had not been educated in the same school of publicity as he had.

Finally, after a weary six weeks of fruitless waiting, during which it was all "outgo" and no income, he betook himself to the college from which he had sucked his advertising knowledge at so much per suck. He was beginning to think that he had been a veritable sucker, but felt sure that when he stated his case to the principal he would be given some kind of engagement to enable him to tide over the present emergency. He began by stating that he thought the city market was overcrowded with advertising brains. The principal allowed that there might be something in that.

"Why not try elsewhere?" he suggested.

"No," replied the disconsolate graduate; "it is of no use. I think I had better go back to my trade."

"Let me see—what was your trade?" asked his tutor absently.

"I was a plumber," replied the pupil mournfully.

"A plumber?" exclaimed the advertising savant scornfully. "And you gave up such a mine of wealth to join the ad. writers' ranks! Say, sonny, hurry back to the bench by the first train you can catch. Why, you could make more money in a week than I could in a month, and just as honestly, too."

So the plumber went back to his country business, and the college principal went into his sanctum and mailed another batch of circulars to prospective suckers.

**John S. Grey.**

## With the Makers

**The Peterson Push Nipple Radiator and Boiler Vise.**

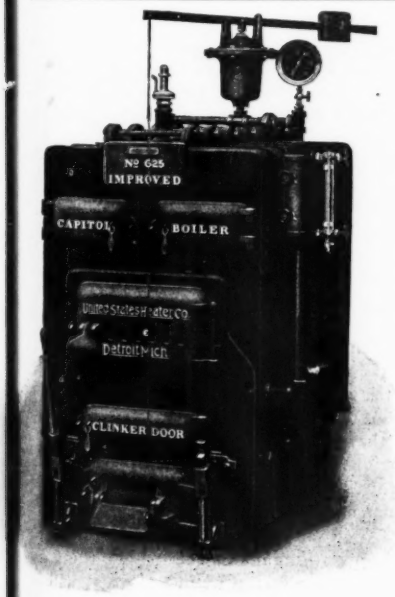
H. L. E. Peterson, of 51 Douglas avenue, Elgin, Ill., reports a gratifying and growing demand for the push

The Peterson Vise.

nipple radiator and boiler vise which he invented and placed on the market some time ago. In describing what this vise will do Mr. Peterson says that it not only does better work and saves the steamfitter time, trouble and money, but that it also makes an absolutely tight joint, a thing which is practically impossible when the units are beaten together by the old method. This vise, as herewith illustrated, has an eleven foot long chain attached, the width between the ends of the chain, as shown, being fourteen inches, and it makes what used to be a nerve-racking, tiresome and disagreeable job, an easy and pleasant one. A glance at the illustration will convince any practical steamfitter of the fact that its construction is absolutely correct, according to the inventor's claims, and the ease with which the vises are sold when being demonstrated seems to confirm his view in the matter. Steamfitters and heating contractors who have not yet seen this vise are requested to get in touch with the manufacturer, and a postal card, mentioning "Domestic Engineering," is all that is needed to secure a new and handsome 8-page folder containing full particulars.

**A New Porcelain Enameled Closet Tank.**

The Humphryes Manufacturing Company, of Mansfield, Ohio, report an active demand and large sale of their porcelain enameled closet tank, which they have lately put on the market. This tank has no lining to corrode and leak, no wood to swell and no joints to break, thereby avoiding the principal objection to the wood tank. These features, combined with the fact that this tank is indestructible and has a beautiful sanitary


# Improved Capitol Boilers

It is an established fact that the efficiency of a boiler depends largely upon the amount of prime heating surface it contains—and that this heating surface be so arranged as to absorb every possible heat unit.

**Improved Capitol Boilers** excel in this feature. They are constructed with intermediate sections, so placed that the fire comes into direct contact with **all** prime heating surface.

And this is but one of the special, practical merits of **Improved Capitol Boilers.** Send for descriptive, illustrated literature. Get the Catalog. Your trade, as well as your personal interest, is concerned in selling the best boiler on the market.

## United States Heater Company.

**General Offices and Works: Fort St., and Campbell Ave., DETROIT, MICH.**

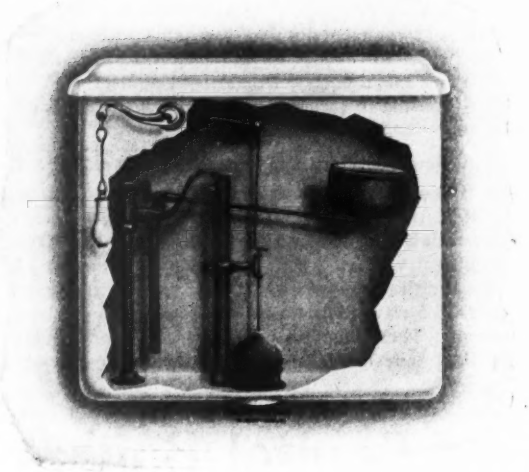
Branches:

| | |
|---|---|
| DETROIT, | 139 Jefferson Avenue |
| NEW YORK, | 129 Worth Street |
| CHICAGO, | 34 Dearborn Street |
| KANSAS CITY, MO., | 120 W. 11th Street |
| OMAHA, NEB., | 916 Farnam Street |

Sales Agencies:

| | |
|---|---|
| ST. LOUIS, MO., | L. M. Rumsey Manufacturing Co. |
| DENVER, COLO., | Kellogg & Stokes Stove Co. |
| MINNEAPOLIS, MINN., | Plumbing & S. F. Supplies Co. |
| NORFOLK and RICHMOND, VA., | Virginia-Carolina Supply Co. |

appearance, make it an economical and desirable fixture. The valves are another strong point that these people advance. They are heavy, thoroughly tested, suitable to any water pressure and are practically noiseless in operating. The pull is vitrified china, and the lever is all brass and very easy to operate. This fixture can be furnished with center push button if desired. The tank is fastened to the wall by a concealed iron hanger, and can be put up in a few minutes. Every plumber has experienced the annoyance of receiving goods, the different parts of which do not fit together, which



Sectional view of the Humphryes Mfg. Co.'s new porcelain enameled closet tank.

is caused by their being of several makes. Customers of the Humphryes Manufacturing Company are saved this trouble, as they manufacture everything going into their closet combinations, lavatories, baths, etc., and all fixtures are carefully assembled and tested before shipping. The company will be glad to send further particulars on request mentioning "Domestic Engineering."

## Patents

**901,991. Gas-Regulator.** Albert T. Newman, Greeley, Kans.

**902,016. Equalizer and Separator for Steam.** David M. Stott, Chicago, Ill., assignor of one-half to Horace E. Argo, Chicago, Ill.

**902,030. Floor-Drain and Backwater Trap.** William Weiler, Dayton, Ohio.

**902,041. Pipe-Wrench.** Charles E. Adams, Scrubgrass, Pa., assignor of one-half to Bryan H. Osborne, Franklin, Pa.

**902,096. Valve.** John F. Love, Zanesville, Ohio.

**902,097. Means for Withdrawing and Condensing Vapors.** Cuthbert B. Lowry, Lexington, Ky., and Richard Bernhard, Chicago, Ill.

**902,104. Tile-Drain Inlet.** Henry N. Neireiter, Decatur, Ind.

**902,126. Steam-Trap for Radiators.** Frank L. Watson, Lynchburg, Va.

**902,148. Heating System.** Edwin T. Greenfield, Kiamesha, N. Y.

**902,192. Cock-Coupling.** Emil Witzenmann, Pforzheim, Germany.

**902,277. Combined Hot-Water Heater and Still.** Dennis W. Daley, Pittsburg, Pa.

**902,291. Valve.** John P. L. Halyburton, Cohoes, N. Y.

**902,315. Boiler-Tube Cleaner.** Eugene J. McCarty, Clinton, Mass., assignor to The Clinton Specialty Manufacturing Company, a Corporation of Massachusetts.

**902,355. Steam-Trap.** Thomas R. Whittaker, Lawrence, Mass.

**902,366. Steaming Apparatus for Steam Radiators.** Herman E.. Belz, Chicago, Ill.

**902,401. Water-Purifying and Like Apparatus.** Adolphe L. Helwig, Paris, France.

**902,539. Steam Heating Apparatus.** Marshall F. Smith, Lowell, Mass., assignor to Eddo V. Bates, Lowell, Mass.

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**Burlington, Iowa.**—The Russell Sewage Disposal Company, of this city, has secured the contract for the installation of one of its sewage disposal systems without a sewer at the Hughes Farm residence at Elmwood, Ill.—Adv.

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### PULL.

**By A. C. Cogswell, of Detroit.**

'Tain't no use to holler and say the times are off,
'Coz the world is jest the same, no matter how ye scoff.
Plow along an' make things hum;
Then ye will be goin' some.

Try and pucker up a bit; that's the thing to do;
An' everything is goin' tu brighten up with you.
'Tis the push an' go that tells.
Take a pull at all the bells.

When their welkin reaches out, thru the good clear air,
You'll be happy at the thought, you are playin' fair.
Take a slap at him who knocks;
He is headed for the rocks.

Burn the feller up that tries to put things on the bum.
Jest keep hustlin' right along; git him on the run.
Ye have got the work to do;
All that's good must come to you.

* * * * * * * *

If the sun don't shine, jest smile; 'tis the proper thing.
An ounce of loyal acts from you, a pound of good will bring.

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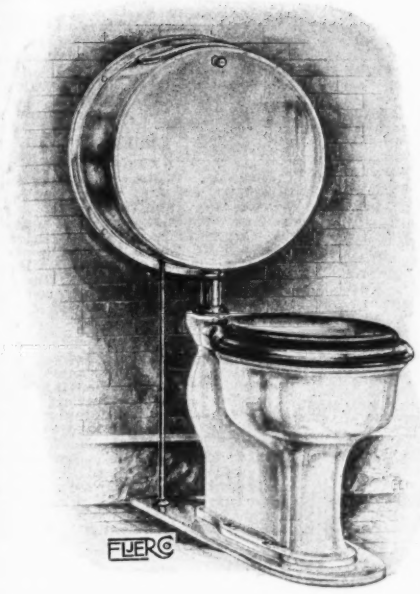
***Readers of "Domestic Engineering" are urged to examine the advertising pages of this paper. Enterprising manufacturers and jobbers are showing novelties for plumbing and heating men. There is no better way to keep abreast of the times than by reading our advertising pages. In writing advertisers please mention "Domestic Engineering."***




PATENTS NOW PENDING
Both mechanical and design

# ELJER China Tank

Same material as bowl with no metal linings to corrode or leak. No wood to open up at joints or become saturated with foul dampness. Extra heavy fittings throughout.

FLJERCO

CAMERON
WEST
VIRGINIA

# ANOTHER INFRINGEMENT SUIT

HAS BEEN STARTED IN THE U. S. COURTS BY THE

**Consolidated Engineering Co.** of Chicago **AGAINST** **The Monash-Younker Co.**

For infringement of its patents on Belvac Thermofier Valves used in

**THE VAN AUKEN SYSTEM OF VACUUM HEATING**

***To Those Engaged in the Heating Trade:***

The Monash-Younker Company of Chicago is offering for sale a valve for the radiators of vacuum heating systems, called the "Radifier" valve. Such "Radifier" valve is substantially a copy both in its external appearance and internal construction of our "Thermofier" valve, and is a direct and flagrant infringement upon our patents. In order to protect our rights under these patents, we have found it necessary to begin legal proceedings against the Monash-Younker Company and have, therefore, begun two suits for infringement in the United States Circuit Court for the Northern District of Illinois against the Monash-Younker Company asking for an injunction and for award of profits and damages due to the infringement, and such suits are now in progress as Chancery Case No. 29,249, and Chancery Case No. 29,255. These suits will be vigorously prosecuted, and, in view of the fact that the infringing valves not only come under the broad claims of our patents, but contain all of the essential features covered thereby, the Monash-Younker Company, as well as all purchasers of so-called "Radifier" valves, will unquestionably be held liable for infringement.

## CONSOLIDATED ENGINEERING COMPANY

**MAIN OFFICE AND FACTORY: 42 West Jackson Boulevard, CHICAGO, ILL.**

Branches: New York Pittsburg Indianapolis St. Paul Seattle Denver

Sole Licensees for the manufacture and sale of VAN AUKEN SYSTEM OF VACUUM HEATING with BELVAC THERMOFIERS

THE ADVERTISEMENTS IN DOMESTIC ENGINEERING ARE INDEXED. TURN TO PAGE XXVI.

# Domestic Engineering

Published each Saturday by "Domestic Engineering" (Incorporated). Office of publication, 49-53 North Jefferson street, Chicago. Telephone, Main 3254.

Advertising Rates: The rates for advertising will be forwarded upon application. The publisher reserves the right to reject advertising matter of an objectionable nature.

Copy and cuts for advertisements should be received by the last day of the week preceding publication. We cannot guarantee insertion or changes in advertisements if received later.

Terms of Subscription: To subscribers in the United States, $1.00 a year.

To subscribers in Canada and foreign countries within the postal union, $2.00 a year.

Single copies of current issues, 5 cents; copies of back numbers, 10 cents each.

Subscriptions are payable in advance, the regulations of the Post Master General forbidding the extension of credit for subscriptions.

October 31, 1908


## CLASSIFIED ADVERTISEMENTS

**The rate of advertising under this heading is 10 cents a line an insertion. The average advertisement runs five words to a line. To insure insertion in this column copy should be received not later than Wednesday afternoon.**

### Help Wanted.

WANTED—EXPERIENCED HEATing and plumbing goods salesman, acquainted in Central New York. Address No. 970, "Domestic Engineering," Chicago.

**WANTED—FIRST CLASS SALESmen in every locality calling on the plumbing trade to sell an A-1 plumber's tool. Answer, giving territory covered, to Aztec Mfg. Co., 205 Tehama St., San Francisco, Cal.**

**WANTED—A MAN WHO UNDERstands covering pipes; must be a resident of Chicago; one with business getting ability who wants to go into business. Address No. 952, "Domestic Engineering," Chicago.**

WANTED—SALES MANAGER; must be thoroughly capable and with ability to secure better than ordinary results when in full charge of at least fifteen salesmen of plumbing goods. Address No. 973, "Domestic Engineering," Chicago.

WANTED—A MAN OF ENERGY and ability to take charge of our plumbing, tinning and steam heating department. Must possess sufficient executive or business ability to take charge of this end of the business and make it successful. Will sell an interest if party wants to buy and treat the right man liberally as to terms. Our business is large and this end of it has been very profitable. Unusual opportunity for the right man. References required. Rock Springs Lumber Co., Ltd., Rock Springs, Wyo.

### Patents.

Don't spend a dollar on Patents until you have read our free book. Benjamin & Bassett, 514 F street, Washington, D. C.

### Situations Wanted.

SITUATION WANTED—HEATING, Ventilating and Sanitary engineer is open for position as superintendent, estimator or draftsman. Member A. S. H. V. E. and A. S. I. P. S. E. Address No. 969, "Domestic Engineering," Chicago.

MANAGER OR SUPERINTENDENT, experienced in steam or plumbing brass work is open for engagement. Expert in cost account work and as a "leak stopper." Can produce results and save money. Address No. 962, "Domestic Engineering," Chicago.

SALESMAN—EXPERIENCED IN both plumbing and steam lines, with thorough acquaintance among Eastern, Southern and Middle West jobbing trade, wants a change. Might entertain taking good lines on commission in New York and vicinity. Address No. 963, "Domestic Engineering," Chicago.

SITUATION WANTED — YOUNG man open for position as manager, dept. manager or buyer. Thoroughly posted in plumbing and heating line; am a producer, as my past record will prove; new houses entering this business or old houses needing a dividend earner will do well to address No. 971, "Domestic Engineering," Chicago.

### For Sale.

FOR SALE—A PLUMBING AND HEATING business; town of 5,000; can stay in my building; Address William Haworth, Kaukauna, Wis.

FOR SALE.—ONE FOUR HUNDRED horse power Warren Webster feed water heater, safety valve grease controller, complete; used six months; reasonable. Address M. J. Hawkins, Albany, N. Y.

FOR SALE—BEST NATURAL GAS appliance and plumbing business in best Oklahoma city, working ten men. Owners covered over with other business. Address No. 974, "Domestic Engineering," Chicago.

FOR SALE—PLUMBING AND heating shop in Michigan town, 13,500 inhabitants; only one other shop in city; good reasons for desiring to sell. Address No. 972, "Domestic Engineering," Chicago, Ill.

FOR SALE—THE BEST EQUIPPED and situated shop for high and low pressure work in the country is for sale. Plumbing department can be added with success. Within an hour from New York City Hall. Right parties can get all the business they can handle. Address No. 975, "Domestic Engineering," Chicago.

### Agencies Wanted.

EXPERIENCED AND RESPONSIble salesman desires to represent in Chicago manufacturers of plumbers' or steam specialties salable to jobbers, the trade or to consumers; nothing trifling considered; highest references. Address No. 944, "Domestic Engineering," Chicago.

### BOOKS.

**Kitchen Boiler Connections.**—Range boilers and water backs under various conditions offer an occasional difficulty to the plumber, but the remedy to apply in every case can be found in this book. It contains 196 pages and 113 illustrations and is worth many times the price we ask, $1.00, delivered. "Domestic Engineering," 49-53 N. Jefferson St., Chicago, Ill.

**Swimming Pools.—Their construction, cold and hot water supply; various methods of heating water; directions as to selecting correct sizes of heaters. A complete guide, containing the latest information on the subject. By Jno. K. Allen, Associate Member of American Society of Heating and Ventilating Engineers, Editor of "Domestic Engineering." Over 30 illustrations. Bound in cloth. Price, 50 cents, postage paid. "Domestic Engineering," Chicago.**


## Rack Labels

**Practical for Plumbers**

They are mighty good things, ought to be in every shop. Easily applied to shelves, racks or drawers. Shows what you want at a glance, no more guessing or delayed customers. Not only tells the article but illustrates it. Systematizes and facilitates stock taking, gives a neater and smarter appearance to shops. It's a money saver! Printed on water-proof card in plain readable type. Prices low—prices direct or from F. W. Webb Mfg. Co., Elm St., Boston, Mass.

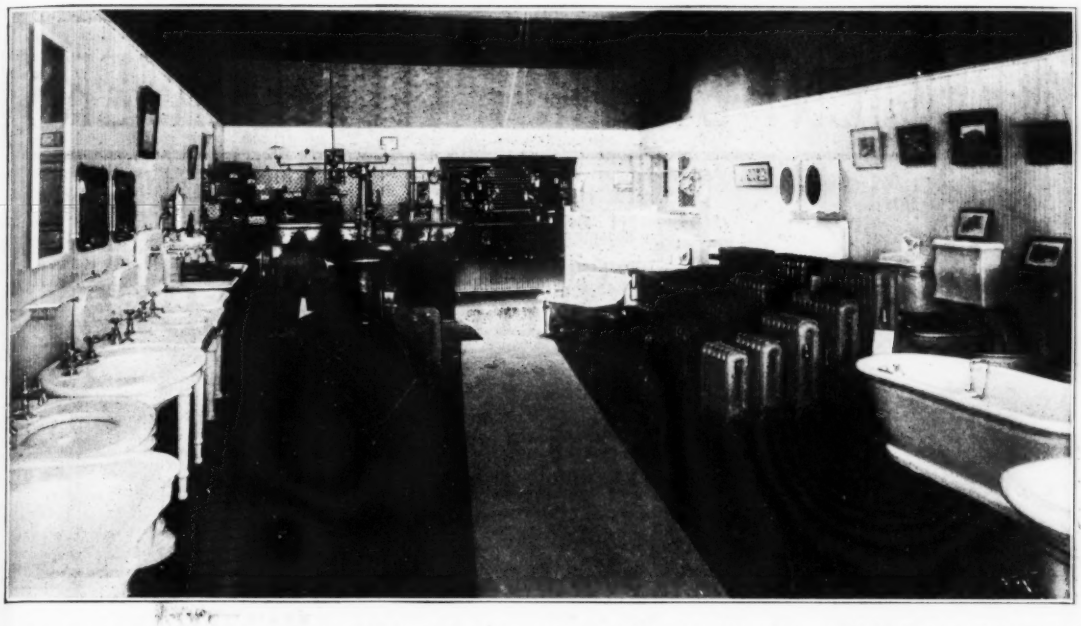
**MERCANTILE LABEL CO.**
**NASHUA, N. H.**

**Adjustable Radiator Foot Rest**

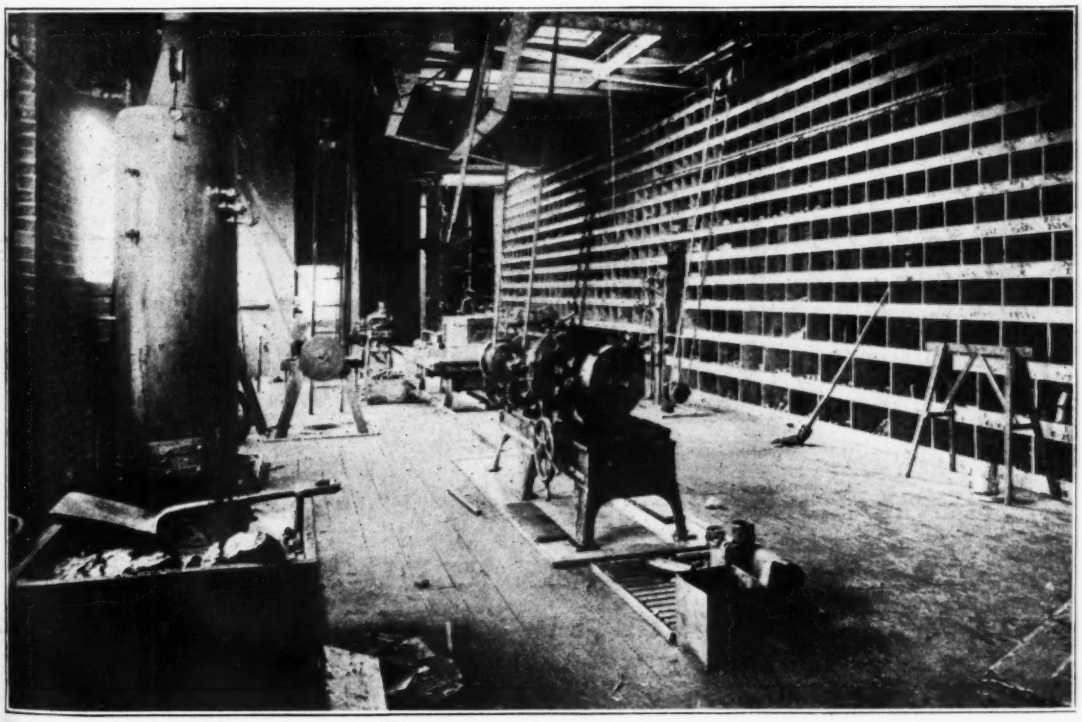
The time saved on each job pays for them—can be used for bath tubs and other fixtures

**The Jennison Company, Fitchburg, Mass.**
Sold by Jobbers

**F. E. CUDELL'S**
Sewer Gas and **TRAP** Backwater
(Patented)
For Wash Bowls, Sinks, Bath and Wash Tubs
Put into the White House by the United States Government
For Venting use Vent Trap. CLEVELAND, O.



Interior view showing portion of display and office arrangement in the elegant home of the Barnes-Stephens Plumbing & Heating Company, at Colorado Springs, Colo.



Well arranged shoproom of the Barnes-Stephens Plumbing & Heating Company, at Colorado Springs, Colo.

# EFFICIENT STEAM WATER HEATERS

USED IN CONNECTION WITH

## Sunray Tank Heaters

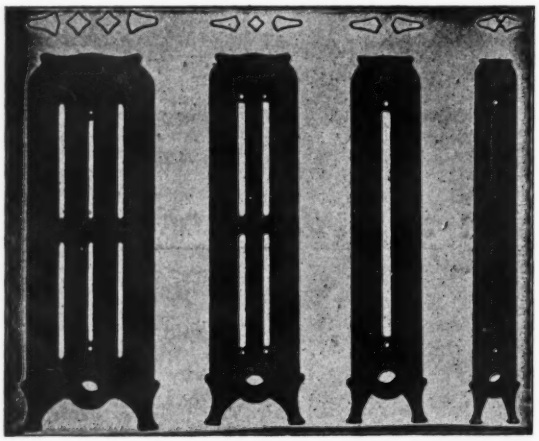
FILL A LONG FELT WANT

## INVESTIGATE!

MADE BY

**THE J. L. MOTT IRON WORKS**

Boston Chicago New York, 5th Avenue and 17th Street Denver San Francisco



# SAY TRITON

**UNITED STATES RADIATOR CO.**

DUNKIRK, N. Y.

BRANCHES: NEW YORK WASHINGTON CHICAGO MINNEAPOLIS

WAREHOUSES: JERSEY CITY CHICAGO MINNEAPOLIS


THE ADVERTISEMENTS IN DOMESTIC ENGINEERING ARE INDEXED. TURN TO PAGE XXVI.